

# FINAL REPORT

DAN00183

## Irrigated Faba Beans - a profitable crop for irrigators in the Southern Region

### PROJECT DETAILS

**PROJECT CODE:** DAN00183

**PROJECT TITLE:** IRRIGATED FABA BEANS - A PROFITABLE CROP FOR IRRIGATORS IN THE SOUTHERN REGION

**START DATE:** 31.10.2013

**END DATE:** 01.04.2014

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### Summary

This faba bean industry scoping study reviewed the current knowledge of growing faba beans in southern Australia under full irrigation and identified research and development (R&D) priorities. A literature review and consultation with leading growers, agronomists and a faba bean breeder led to the identification of agronomy and crop protection issues within irrigated systems. Since price and markets were identified as the primary drivers for growers choosing to grow faba beans in irrigated systems, local buyers were also consulted. A faba bean buyer's guide for southern New South Wales (NSW) and northern Victoria (VIC) was also produced.

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## Conclusions

Key findings from the project include:

- The major driver to produce irrigated faba beans is price. Two companies, Croker Grain and UniGrain Pty Ltd, have developed stable markets in the processing trade and aquaculture areas over long periods. The major difficulty is a volatile market environment and developing acceptable contracts with growers pre-sowing instead of at harvest. There is potential for 58,000 tonnes of production in the Murrumbidgee and Murray Valleys.
- The major limitation to produce crops is water allocation. Growers are choosing crops based on returns per megalitre more than profitability analyses between crops. Faba beans compete against wheat (or canola) as a winter crop.
- Growers and regional buyers have the potential to develop long term relationships to encourage increased and consistent production.
- Growers have improved agronomy practices compared to 10 and 20 years ago. A management package could be updated quickly with current available experience. On-farm research priorities have not changed markedly over the past 10-20 years.
- Support to drive production increases is needed. Most irrigated growers rely on commercial agronomists for advice and co-learning. A dedicated independent agronomist is required to coordinate on-farm research, development and extension (RDE).

## Recommendations

Four major RDE issues were prioritised by industry in December and January. These were:

1. Plant breeding to focus on yield, disease resistance and standing ability under irrigated situations.
2. Agronomy research to focus on better management practices and dealing with soil constraints under various irrigation systems (furrow, border check, spray).
3. A team, including both agency and industry members to drive R&D and support production increases. This should include dedicated agronomists to coordinate activities, information development and research.
4. Updated biannual publications to focus on agronomy and marketing that could be distributed via Pulse Australia, state agencies and grower groups such as the Irrigated Research and Extension Council (IREC).

More details on the 23 recommendations are presented within the report under nine subject areas.

## Outcomes

### Objectives

1. To develop a scoping report on potential and limitations for faba beans as a break legume crop under irrigated farming systems.
2. Develop a faba bean buyer's guide for pulse growers.

## Background

A realistic and achievable yield for irrigated faba beans in the Riverina is 5t/ha, making them a very profitable crop to grow. Faba beans have been considered by some as risky and less profitable to grow than wheat. However, with nitrogen (N) applications not required for faba beans, their input costs are considerably less than for wheat. They provide significant benefits to the entire crop rotation (disease break and net gain of residue N) for subsequent wheat/canola/cotton crops; hence growers are again looking to include them in their cropping rotations.

With only 4% of pulses being grown through the zones, there is a huge need for profitable and sustainable farming systems to increase to a higher ratio level of legume to non-legume crops. A study of the current marketing situation, as well as a review of previous faba bean work, would give the Regional Cropping Solutions (RCS) panel a starting point to help guide future GRDC investment in irrigated faba bean production.

Trial work and grower results indicate that faba beans are a profitable break crop under irrigation; however, RCS members believe that the crop suffers a severe perception problem and that the fundamentals of the crop are not understood well under irrigation farming systems.

## Outcome Benefits

The recommendations from this review were provided to the Southern Irrigation RSC panel for consideration of a forward research plan and priorities. The process of consulting with growers and faba bean marketers has facilitated a discussion and better understanding between Crockers and local growers on drivers for each sector. Discussions with Unigrain also encouraged opening of receivals and interest from more growers to grow faba beans. It is expected that the recommendations will lead to more coordinated R&D, better varieties to grow under irrigated systems and future agronomy research which will generate recommendations targeted to irrigated systems under a wider range of soil types.

## Achievements/Benefits

### Overview of Project Achievements

From December 2013 to February 2014, News South Wales (NSW) Department of Primary Industries (DPI) undertook a two month review of faba bean production in the southern NSW irrigation and northern Victorian (VIC) production regions. The aim was to compile a report of the current status of irrigated faba beans and identify current or expected limitations of the crop under irrigated farming systems based on previous reports, trials and discussions with key stakeholders. A draft report was delivered to the GRDC Irrigated RCS network to prioritise future investment and key research questions before the GRDC Southern Panel investment planning meeting in February 2014.

NSW DPI interviewed a total of 34 growers, agronomists and current marketers and worked closely with Pulse Australia to review market opportunities. The following key questions were used in the surveys:

- What are the price and quality requirements to capture stockfeed and food markets?
- What are the market contract requirements to support consistent production and tonnage requirements for local buyers in 2014?
- What is the ideal rotation 'fit' for faba beans in southern irrigation farming systems?
- What are the key agronomy management changes needed to increase productivity (tonnes/hectare)?
- What are the key agronomy constraints that decrease productivity?
- What are the key faba bean plant variety traits needed to maximise yield and quality in the southern irrigated production areas?

Major drivers and barriers to growing irrigated faba beans were identified and recommendations for future RDE were presented.

A four page faba bean (irrigated) marketing guide was produced and will be loaded onto Pulse Australia and NSW DPI websites for current and interested faba bean growers to use (Attachment 2).

## Research

A literature review of previous published and unpublished literature was conducted and 34 faba bean growers, agronomists, faba bean marketers and a faba bean breeder were surveyed. The information was compiled into a scoping study report with recommendations for future RDE for growing irrigated faba beans.

### **Delivery/Path to Market**

A draft version of the scoping report was provided to the Southern Irrigated RCS panel for their February 2014 meeting for consideration and feedback was incorporated into the final version of the report. A draft version was distributed to those who participated in discussions, and feedback also incorporated into the final version. Once it is accepted by GRDC, it will then be distributed more widely to faba bean marketers and other interested growers. The buyer's guide will be available on the Pulse Australia and NSW DPI websites (Attachment 2).

### **Additional information**

A presentation was made at a meeting of pulse growers in the Murray Valley to IREC members and a variety of private discussions were held with key faba bean growers.