



Australian Government

Australian Centre for
International Agricultural Research

Crops

Faba Bean in Ethiopia – Mitigating disease constraints to improve productivity and sustainability

Overview

Faba bean, Ethiopia's most important legume crop, is being devastated by the newly established disease, Faba Bean Gall. The disease is threatening the ongoing cultivation, viability and existence of faba bean crops in the Ethiopian Highlands.

Managing Faba Bean Gall is a priority for the Ethiopian government but very little is known about the disease.

This project will fill knowledge gaps around the conditions and practices driving its spread and impact, and will search for sources of genetic resistance. The collected data will be used to underpin the design and evaluation of an integrated pest management package and the development of resistant varieties.

The project will also investigate the presence and relevance of other diseases.



KEY FACTS

ACIAR Project No. CIM/2017/030

Duration: December 2018 to June 2023 (4.5 years)

Target areas: Ethiopia

Budget: A\$1,849,949

Project Leader

Professor Martin Barbetti, University of Western Australia

Key partners

- NSW Department of Primary Industries
- International Centre for Agricultural Research in the Dry Areas
- Ethiopian Institute for Agricultural Research, Ambo and Holetta Research Centres
- Amhara Agricultural Research Institute, Ethiopia

ACIAR Research Program Manager

Dr Eric Huttner

Objective

The project aims to achieve reliable, productive and profitable faba bean production in Ethiopia.

The objectives are to:

- Map the spread of Faba Bean Gall in space and time, identify the conditions and practices driving its spread, and determine its impact on women and men farmers in Ethiopia.
- Identify the cause of Faba Bean Gall, determine the diversity of the pathogen's isolates and establish the pathogen's life cycle, host range and spreading mechanism.
- Design and evaluate disease management options for Faba Bean Gall and other relevant faba bean pathogens, considering fungicides and cultural practices.
- Identify sources of genetic resistance to Faba Bean Gall and other relevant faba bean pathogens and introduce resistance into adapted faba bean lines.
- Determine if the Faba Bean Gall disease agent is present in Australia on faba bean or alternative hosts.

Expected scientific results

- New data to inform more relevant and effective decisions for short and long term management of Faba Bean Gall and other faba bean diseases.
- Development of appropriate testing for Faba Bean Gall and related pathogens.
- Development of, and access to, sources of genetic resistance for ongoing faba bean breeding.
- Provision of data to assist in the fight against Faba Bean Gall and other faba bean diseases internationally.
- Development of integrated disease management packages and extension packages for faba bean producers.
- Increased capacity among the Ethiopian scientific community and extension workers to address other plant disease issues using new methodologies and knowledge obtained through this project.

Expected impact/outcomes

- Ongoing profitable, environmentally sustainable, faba bean production.
- Ongoing use of faba beans as an important break crop in cereal crop farming enterprises.
- Reduced use of fungicides through the development of integrated Faba Bean Gall disease management options.
- Increased knowledge and capacity of Ethiopian researchers and extension workers to fight against Faba Bean Gall.
- Availability of new data for international plant pathologists working to understand and address Faba Bean Gall.
- Access to sources of genetic resistance to the disease for the international faba bean breeding community.

