



Horticulture

Responding to emerging pest and disease threats to horticulture in the Pacific islands

Overview

The development of high-value fruit and vegetable crops and industries that supply both domestic and export markets with produce free of unsafe agrochemicals is a priority for many Pacific Island Countries. Most depend on imports of staple foods, fruits and vegetables, which can lead to significant trade imbalances.

Attempts to intensify high-value vegetable production have been unsuccessful – yields continue to be low by international standards and increased synthetic inputs have had serious impacts on health and the environment.

This project will build on the development of technologies that can support sustainable intensification of high-value crops; address the increased incidence and severity of pests and diseases throughout the Pacific Islands due to accidental incursion and/or climate change, and consider a long-term approach to sustainable production of high-value vegetable and fruit crops by continuing to build research and development capacity with an emphasis on sustainable pest and disease management technologies.



KEY FACTS

ACIAR Project No. HORT/2016/185

Duration: May 2018 to September 2023 (5.5 years)

Target areas: Fiji, Samoa, Solomon Islands, Tonga and Papua New Guinea

Budget: A\$4,512,558

Project Leader

Dr Michael Furlong, The University of Queensland

Key partners

- Pacific Community
- Ministry of Agriculture, Fiji
- Ministry of Agriculture and Fisheries, Samoa
- Ministry of Agriculture and Livestock, Solomon Islands
- Solomon Island National University
- Ministry of Agriculture, Food, Forests and Fisheries, Tonga
- National Agricultural Research Institute, Papua New Guinea
- University of Goroka, Papua New Guinea

ACIAR Research Program Manager

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Objective

The project aims to develop integrated pest and disease management strategies for the sustainable intensification of fruit and vegetable crop production, and address the threats posed by inappropriate use of pesticides, emerging pests and diseases, and climate change.

The objectives are to:

- Build diagnostic and strategic planning capacity for integrated pest and disease management, including biological control.
- Develop and implement biological control strategies for invasive and emergent pests of selected crops and cropping systems.
- Extend integrated pest and disease management and insecticide resistance management strategies to other cropping and production systems.
- Build surveillance and diagnostic capacity for the management of emerging pest, the Fall Armyworm (*Spodoptera frugiperda*) in Papua New Guinea and the Pacific Islands.

Expected scientific results

- Increased capacity of local researchers to develop control approaches for other emergent and invasive pests when they occur.
- Development of integrated pest and disease management strategies that are based on biological control of pests.
- Rigorous assessment of the effectiveness of plant health clinics as a means of sharing relatively complex information with farmers.
- Comparative study of the effectiveness of the extension technology in different contextual environments.
- Use of male and female participation data to determine if there is any gender bias in the results, and gauge the effectiveness of the plant health clinics in reaching and meeting the needs of women vegetable growers and farm workers.

Expected impact/outcomes

- Agriculture ministries in collaborating countries will consider the importance of integrated pest and disease management research and extension activities in investment decision-making processes.
- Plant health clinic programs are embedded in the ongoing extension strategies and work plans of the collaborating countries' agriculture ministries.
- Increased capacity for the collaborating institutions to develop integrated pest and disease management strategies for crops other than those specifically addressed by this project.
- Improved plant protection courses taught as part of the participating universities' agricultural curricula.
- Adoption of new integrated pest and disease management strategies by subsistence and commercial farmers.

