Australian Government
Australian Centre for International Agricultural Research

Horticulture

Integrated management of Fusarium wilt of bananas in the Philippines and Australia

Overview

The trade and livelihoods of smallholder banana producers in the Philippines is threatened by Fusarium wilt (FW) which continues to spread throughout South-East Asia.

The Philippines is a major exporter of Cavendish bananas and FW is the biggest threat to export industry. This affects small and medium scale growers as they have no other land to move or expand production into and have few, fallow and rotation, profitable options.

About 10% of the land currently used for export production in Mindanao is infected with FW, with differing degrees of severity from destruction and abandonment of plantations to single infected plants in isolated areas of farms. FW is continuing to spread, mostly through the movement of contaminated soil and infected planting material.

The current response in the Philippines rely heavily on identification of and use of more tolerant Cavendish varieties. This means production of Cavendish bananas from infected land is possible but is constrained by gradual susceptibility to FW and inferior post-harvest characteristics.

The export industry could be wiped out in as little as five years if FW of bananas isn't controlled in Mindanao. This would result in the loss of US$646.6 million in revenue, and disruption of livelihood for up to 300,000 families.

KEY FACTS

ACIAR Project No. HORT/2012/097
Duration: June 2014 to December 2019 (5 years)
Target areas: Philippines
Budget: A$1,002,050

Project Leader
Anthony Pattison, Queensland Department of Agriculture and Fisheries

Key partners
- Australian Banana Growers' Council
- MegaManila Pest Management Specialists, Philippines
- Provincial Agricultural Office, Philippines
- University of Southeastern Philippines

ACIAR Research Program Manager
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Objective

The project's overall aim is to improve the long-term management of FW and improve the livelihoods of smallholders and communities dependent on export Cavendish production by reducing losses due to FW and improving the productivity and viability of production.

The project's three main objectives are to:

- Develop techniques to limit FW losses to smallholder Cavendish production in Davao del Norte and Ladyfinger production in Australia.
- Evaluate the effectiveness of integrated crop management (ICM) approaches in enabling commercial banana production where FW is present.
- Determine barriers to adoption of systems to suppress FW in banana production in the Philippines and Australia.

Expected scientific results

- Greater scientific capacity in Mindanao through training and developed applied research capacity.
- Better information on management of FW.
- Reduced losses to FW through the implementation of the ICM, enabling crop production in high disease situations.
- Provision of a framework for understanding soil ecological impacts on soil borne diseases and FW.

Expected outcomes

- Increased capacity in Mindanao for soil biological assessment and farming systems methodologies.
- Improved FW management in the Philippines and Australia.
- Prevention or slowing of further spread of FW.
- Potential retention of up to 26,000 jobs and US$300 million in the economy annually, through development of effective practices to stop or slow the spread of FW.
- Potential opportunities for sustainable production of niche market varieties such as Lady Finger and Ducasse bananas, particularly in Australia's sub-tropical regions.
- Greater employment opportunities for farm workers in Mindanao.
- Maintained land value for independent Philippine banana growers.
- Development of vegetative ground covers to slow soil movement and erosion from banana plantations.
- Reduced need for synthetic inputs such as fertilisers, nematicides and herbicides due to enhanced biological activity.

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