

HELPING TO ACHIEVE SUSTAINABLE AGRICULTURE IN MYANMAR

Locations	Myanmar
Dates	01/04/2019 - 30/08/2020

Summary

The agriculture sector in Myanmar is predominantly dominated by rice. It is a key commodity for domestic food security as well as a generator for export income, and in the future could have the potential to become a global rice supplier. However, to accomplish this, the sector and its farmers must address challenges faced by crop losses. CABI is working with scientists in Myanmar to promote green agriculture practices.

The problem

Agriculture in Myanmar is facing change. Dominated by rice, the sector aims to ensure food and nutritional security, enhance rural development and increase the country's foreign exchange through exports. Whilst pulses have become a major export crop and extensive fruit and vegetable production is carried out in rural areas, rice remains to be the predominant commodity for domestic food security and export income for Myanmar and has the potential to revert to being a major, global rice supplier.

However, in Myanmar, rice intensification is increasingly being challenged by devastating pre-harvest crop losses from insect pests with insecticide misuse being one of the major causes.

Legal pesticide imports have gradually increased by almost 81%, from 11,000 tons to 20,000 tons, between 2011 and 2018. This figure is likely to increase

even further and problems related to pesticide misuse, including the fragmentation of existing knowledge on pesticides and the illegal cross-border trade of pesticides, are leading to human health and environmental concerns.

The need for serious data and evidence beyond the rhetoric is therefore imperative and this small research project is a major step to support ‘green’ agriculture for rice and vegetables in Myanmar.

Working in line with the Myanmar-ACIAR collaborative strategy 2017-2027, this project will review pest management practices used by farmers and the use of pesticides on key food crops.

What we are doing

Given that pesticide misuse poses significant problems for food security and safety, human health, the pollution of water and soil resources and non-target organism such as pollinators, the objective of this project is to focus on some of the main issues faced in tackling these challenges in Myanmar.

The project aims to benchmark farmers’ current pest management practices and pesticide use and misuse in food crops, using rice and vegetables as examples, in major production regions. Practical recommendations and actions to address current and potential future problems will also be given.

Research questions:

- What is the seasonal abundance of rice and vegetable pests and what losses can be attributed to them?
- What measures are presently used for controlling these pests, including chemical pesticides?
- What are the pesticide distribution/marketing systems, both legal and illegal (cross-border trade) with emphasis on compounds now used for controlling rice and vegetable pests?
- Have any adverse effects been noticed in terms of human or livestock health, or other non-targets such as fish in rice-fields or bees?
- What roles do the public and private sectors play in research and extension for rice and vegetable production systems?
- What is the capacity of stakeholders to understand IPM principles in addressing pesticide use/misuse in the public and private sectors, including farmers and rural communities?
- What is the current level of training and other capacity-building initiatives on IPM and responsible pesticide use?

Expected outputs

The project will analyse these questions to develop preliminary recommendations on best practices which will then be evaluated, on-farm, by rice and vegetable producers in pilot areas. Building on lessons learned from the pilot trials and from the research, a comprehensive follow-up project to up-scale best practices at regional and national level will be planned.

- Identify and address gaps in knowledge necessary to develop sustainable integrated management of pests in rice and vegetables – including the challenge of pesticide use and misuse in Myanmar
- Understand the current situation regarding pest incidence, losses, incurred and practices to manage these pests in major rice and vegetable production areas in Myanmar

Results so far

The research project is well underway. A project initiation workshop was successfully held in April 2019 and attended by 19 participants. The project team was appointed, the proposal, activities and partners roles were endorsed and work packages finalized.

Comprehensive literature reviews and information gathering is on-track and a survey has been developed on farmers' pest management practices, pest residues and health issues relating to pesticide use. Six focus groups have been carried out across Myanmar with a total of 69 farmers participating. The aim of the groups was to draw insights about farm pest management, to understand their beliefs and practices and decision-making, all of which were used to improve the survey.

Toxicology training was held at Yezin Agricultural University in August 2019 and was on the basics of insecticide resistance monitoring, principles of toxicological research, modes of action of insecticides, genetics of resistance development and general lab techniques.

Two surveys to investigate the incidences of insect pests on three import vegetable crops, cabbage cauliflower and okra, have been conducted in areas which could potentially serve as pilot field trial sites. 38 farmers were studied and from these, pest incidence ranked as the highest constraint to farmers.

A dedicated project website www.planthealthmyanmar.org has also been developed as a communication tool.

Donors	Australian Centre for International Agricultural Research (ACIAR)
Partners	Department of Agriculture (DoA), Yezin Agricultural University (YAU), Department of Agricultural Research (DAR), Department of Agriculture, Department of Agricultural Research, Ministry of Agriculture, Livestock and Irrigation






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