Area-Wide Promotion and Adoption of Fruit Fly IPM: Innovative Experiences of Curriculum Development for Farmers Field Schools

AREA-WIDE INTEGRATED PEST MANAGEMENT OF FRUIT FLIES IN SOUTH AND SOUTHEAST ASIAN COUNTRIES

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Outline

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Introduction
Fruit flies in Asia

- *Bactrocera* genus of fruit flies (Diptera: Tephritidae) are highly destructive quarantine pest of tree fruits and cucurbit vegetables.

- Asiatic origin and widely distributed in the South and SE Asia.
  - Oriental fruit fly (*Bactrocera dorsalis*)
  - Melon Fly (*Bactrocera cucurbitae*)
  - Guava Fruit Fly (*Bactrocera correcta*)
Rational of project?

- Horticulture produce are main traded agricultural goods
- In 2004, Asian countries produced 178 million tones of tropical fruits which amounted to 66% of the total global production and earned 2.5 billion US$
- Asian region (East, Southeast, and South) is among the top three regions—for both exporters and importers of fruits and vegetables in the world
- Rapidly growing FTAs in the region
- Tephritid fruit flies (Bactrocera dorsalis & Bactrocera cucurbitae) cause direct damage to fruits and vegetables leading to 90-100% losses depending on pest population, locality, variety and season
Partners/implementing agencies

Funded by
Objectives

To develop effective area-wide, profitable and environmental-friendly management of fruit flies by and for smallholder fruit and vegetable farmers in four Mekong basin countries (Cambodia, Lao PDR, Thailand and Vietnam)
Expected outputs – a snapshot

- Locally adapted IPM technologies for various bio-physical and socio-economic areas
- Developing area-wide FF IPM
- Trained trainers on FF IPM
- Innovation in Farmers Field School curricula
- Farmers education using FFS approach
- Development of extension materials
- Establishment of regional network on FF IPM
- Knowledge dissemination and management on fruit flies
Background Preparations
Activities & outputs
(see http://ipm.ait.asia)

- GIS-assisted mapping
- Country Strategy Papers on FF IPM
- Regional training on FF-IPM and Training of trainers at country level
- Development of training and population monitoring guide
- Baseline survey
- Curriculum development for Farmers Field Schools
- Pilot FF-IPM-FFS on fruits and vegetables
- Farmer’s field day
- Extension brochures, webpage
The IPM Strategy (1-2-3)

- Use of Protein Bait
- Sanitation and cleaning
- Population Monitoring using Methyl Eugenol and Cue-lures

Field exercise guide/Population Monitoring Guide in English and local languages (Vietnamese, Khmer, Lao available soon)

see http://ipm.ait.asia
COMMUNITY-WIDE PILOT FRUIT FLIES IPM-FFS IN GMS COUNTRIES (CAMBODIAN EXPERIENCES)
Case-study FF-IPM-FFS, Cambodia

- Participation in GIS mapping
- Development of country strategy paper
- TOT
- Baseline Survey
- Pilot-FFS
Baseline Survey (March 2011)
Training of Trainers (May 2011)
Pilot FF-IPM FFS (Wet Season 2011)

- 4 FFSs, 2 FFS each on bitter gourd and guava
- Bitter gourd (B. cucurbitae) 16-weeks; Guava (B. correcta) 18-weeks
- 30 farmers each FFS implementing IPM and monitoring population from IPM and non-IPM area (2-3 km apart)
Results

a. Knowledge and skill gains

(Trang village, Ou Ta Ky commune, Thmor Koul district, Battambang province) (Sdao Kanlang village, Dey Ith commune, Kien Svay district, Kandal province)
Results

b. (FTD, Flies per trap/day)

**Trang** (6 sampling days, bitter gourd, *B. cucurbitae*), **Ampv Prey** (7 Sampling days, Guava, *B. correcta*) and **Sdao Kanleng** (10 Sampling days. Guava, *B. correcta*)
Gross income, total expense and net income bitter gourd IPM and non-IPM farmers (Trang village, Ou Ta Ky commune, Thmor Koul district, Battambang province). The IPM farmers harvested more healthy fruits with less cost (mainly on pesticides) leading to higher total and net-income (in US$).
Concluding Remarks
Conclusion

Complementarity among organizations i.e. academic, research institutes and extension agencies coming both form public and private sector domains can benefit innovative development of effective area-wide FF management programmes.

Innovative products/management strategies and their constant integration into farming practices using ‘learner-centered extension approach’ has been effective to date

Available products and IPM strategies coupled with community based training using IPM-FFS FF leads to sustainable results and higher quality of horticultural products for market
Project website http://ipm.ait.asia

Asian Fruit Fly IPM project

Background

The horticultural sector plays an important role in diversification of agricultural production systems and contributes substantially towards increased food security, better nutrition and poverty alleviation. The Asian region is among the top three regions worldwide in terms of global import and export of fresh fruits and vegetables which amounts to 65% of the total global production, and roughly earns in excess of USD 2.5 billion per year.

Problem

Tephritid fruit flies (Bactrocera dorsalis & Bactrocera cucurbitae) cause direct damage to fruits and vegetables leading to 90-100% yield losses. In addition, to the direct losses, its infestations result in serious losses in trade value resulting from strict quarantine regulations imposed by most importing countries.

Stakeholders and Target beneficiaries

The primary target beneficiaries of the project are smallholder fruit and vegetable farmers whereas the secondary beneficiaries will be government extension worker from Mekong river basin countries who will gain new knowledge and become more effective IPM trainers, particularly with regards to farmer training on fruit fly management. Stakeholder organizations involved in the project will be local universities, research institutes and civil society organizations involved in the action research and training activities to be...
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http://ipm.ait.asia/?page_id=673
Thank you

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