



Action Taken for Fall armyworm management in Lao PDR

(from December 2018-October 2020)



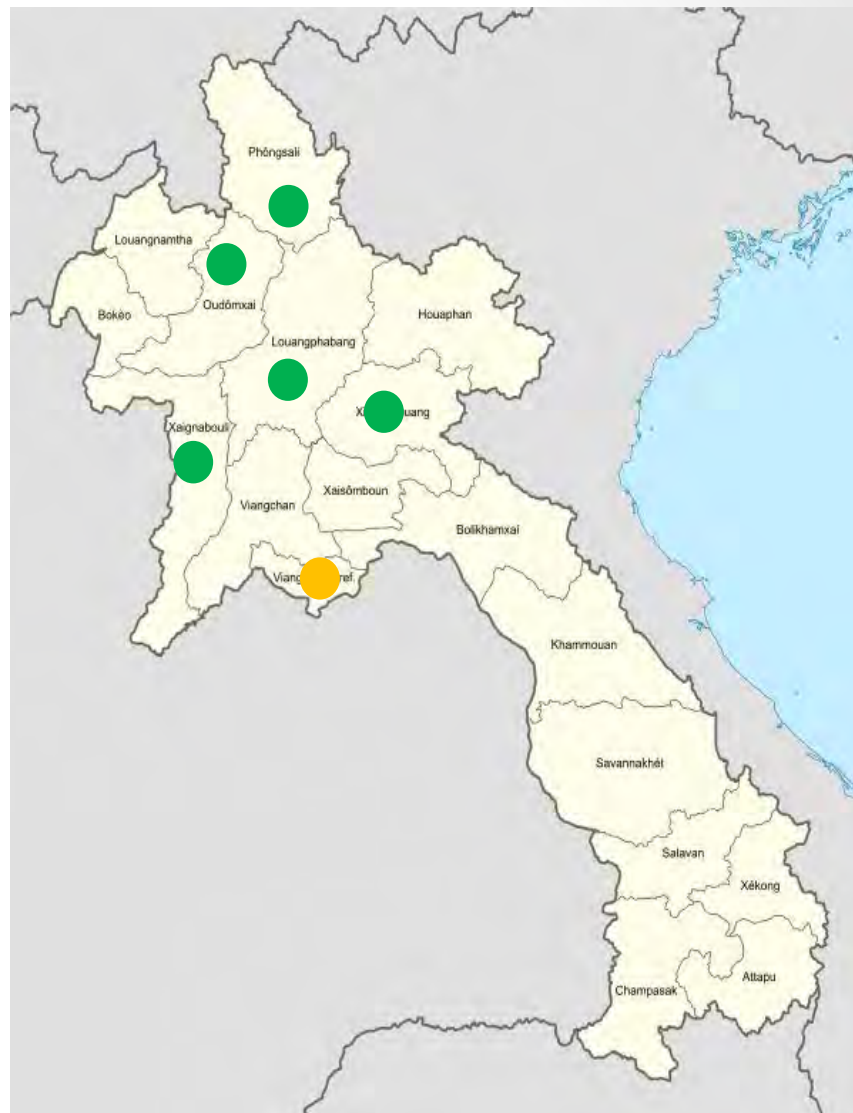
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FAW webinar: 3 November 2020

Background on FAW distribution

- Maize and sweet corn grown throughout the country (151,140 ha)
- Main area is in the North (●)
- FAW first found at the end of 2018, in Vientiane province (●)
- **FAW spread quickly across Lao PDR in early 2019**



Activities undertaken

- **Survey and monitoring**

- The Lao government pays more attention to management and control of FAW by having Prime Minister' Office Notice.
- Also work closely with FAO



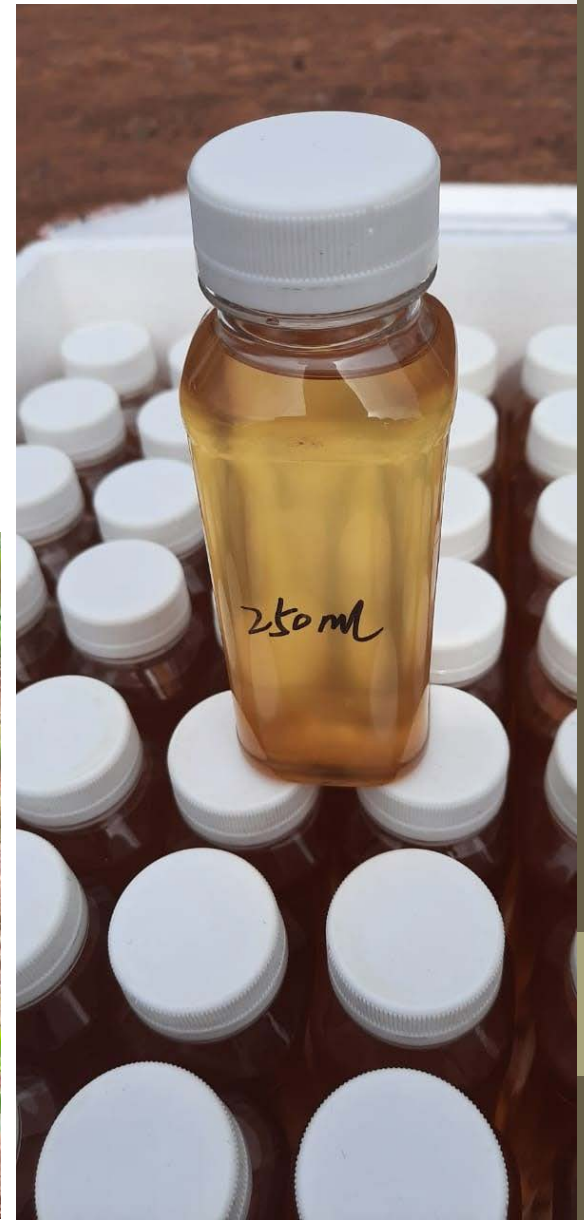
Activities undertaken

- **Local staff and farmer training:**
 - Story, life cycle, ... of FAW and management
 - Natural enemies, benefits of stink bugs, rear and release
 - Make simple molasses trap and light traps for adult moths
 - Make botanical pesticides
 - Used chemicals safely



Activities undertaken

- **Demonstration undertaken in Xaiyaboury province**
 - *Metarhizium anisopliae*



Activities undertaken

- **Farmer action research undertaken in Xieng Kouang province**
 - Encouraged farmers themselves to be involved in the planning of research



Activities undertaken

Treatments: (all treatments included monitoring FAW adults by molasses trap and pheromone traps)

- Plant extracts (maize/sweet corn)
 - Neem extract
 - Guduchi extract
 - Tobacco extract
- Commercial Bt formulation (maize)
- Detergent (maize)
- Plant oil (sweet corn)
- *Trichogramma* sp. and predatory stink bugs (sweet corn)
- Guduchi extracts and predatory stinks bugs (maize)
- Chickens (maize)
- Transplanting (sweet corn)
- Some chemical treatments (maize)
- Different varieties of maize and sweet corn



Observations

Conducted trails:

- on maize in the 2019 rainy season and
- on sweet corn in the 2020 dry season

and currently have one rainy season maize and one dry season sweet corn trial wrapping up.

	Guduchi extract	Tobacco extract	Guduchi extract + stink bugs
<u>Plant damage (%)</u>			
2 nd week	15	22	20
3 th week	14	34	38
4 th week	56	48	24
5 th week	36	26	34
<u>Yield loss (%)</u>	18.7	17.6	9.5

Observations

Farmer engagement

- The model works - farmers stayed interested
- *Of the treatments that involve spraying ...*
- The Guduchi and tobacco extract were effective

About biological control

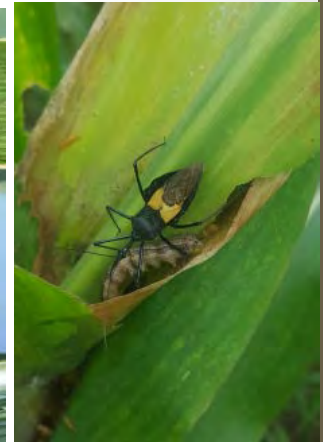
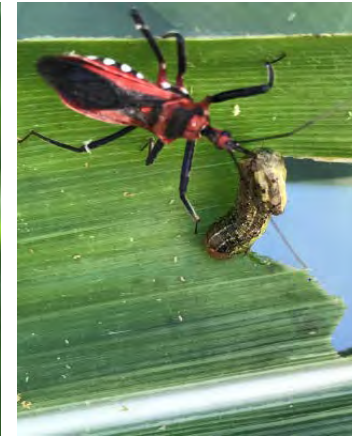
- Chickens are useful biological control agents
- Predatory stink bugs and assassin bugs
- Parasitoids
- Pathogens

IPM

- Plant extract , release predator
- Transplanting



Insect pathogens and beneficial insects



FAW affected by *Nomuraea* sp. FAW affected by NPV? *Eocanthecona furcellata* *Rhynocoris* sp.

Sycanus collaris



Telenomus sp.

Charops sp.

Microplitis sp.

Cotesia sp.

Chelonus sp.

What we learnt

- Two of the plant extracts show promise and are not detrimental to natural enemies.
- The predatory stink bugs are also promising, and we have a breeding technique which farmers could use themselves.
- Egg parasitoids may be a useful component of a future IPM program.
- Still do not have a good understanding of the pathogens already affecting FAW in Lao.
- Still do not know which varieties of maize or sweet corn are most tolerant of FAW
- Having FAW does not mean that you cannot grow maize or sweet corn profitably in Lao.
- Objective is not IPM of FAW but IPM of pests in maize and sweet corn.

Thank you

- Helvetas LURAS
- FAO
- Lao Farmer Network funded by CYMMIT
- Volunteers
- Farmers

