



IPPC Webinar series

Fall Armyworm a global threat to prevent

3rd Webinar - Fall armyworm prevention and preparedness 10 December 2021 Questions & Answers

This document compiles Questions & Answers from the third session of the webinar series "*Fall armyworm, a global threat to prevent*" held on 10 December 2021 from 12 to 14 UTC GMT+1. One hundred and twenty-two (122) participants from 74 countries worldwide attended the webinar.

The webinar's agenda, the list of speakers, the record and presentations can be found at <https://www.ippc.int/es/news/workshops-events/webinars/fall-armyworm-faw-training-part-1-22-october-part-2-19-november-and-part-3-10-december/>

Questions are organized by technical topic: 1) Discussion on eradication feasibility 2) Resistance and registering products, and 3) Climate-smart, agroforestry and maize resistance varieties

Discussion on eradication feasibility

1. Is there an example of successful eradication in recently affected countries?

Answer:	Some countries attempted to eradicate FAW when first detected (e.g., Brunei, Taiwan). The authority instructed farmers to destroy the affected crop (maize) by cutting and burning it. However, this was unsuccessful in stopping re-infestation, mainly because the pest is migratory and can fly in from neighboring countries. To date, there have been no confirmed reports of successful eradication in recently affected countries.
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Resistance and registering products

2. What are the phytosanitary products used to reduce FAW populations? Are there biopesticides to fight this pest?

Answer:	Numerous synthetic pesticides exist, many modes of action are effective against FAW when applied appropriately. You need to check those registered for use against FAW in your country – these can be applied as a seed treatment or to growing plants. In relation to biopesticide, pesticides based on plant extracts are reported to be used, neem
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(azadirachtin), for example. Pesticides based on bacteria, viruses and fungi also exist, and parasitic Hymenoptera, as larval parasitoids, has been reared against FAW. See <https://onlinelibrary.wiley.com/doi/full/10.1111/jen.12856> for a review of biopesticides (and other biologicals) for FAW.

Integrated Pest Management (IPM) should be applied for an efficient control strategy.

3. Does this insect (FAW) have resistance to insecticides?

Answer: FAW has been reported to develop resistance to a wide range of insecticidal products. This includes carbamates, organophosphates, pyrethroids, Diamides, *Bacillus thuringiensis* toxins (Cry1F, Vip3), etc. Different populations have different resistances, and for example, in invasive populations, various international research groups have so far not detected resistances to Cry1F or VIP3; however, this is present in populations from Puerto Rico and Brazil for instance.

Rotation of pesticides with different modes of action is highly recommended to reduce the risk of resistance development. IRAC (the Insecticides Resistance Action Committee) produced helpful guidance which is available online at <https://irac-online.org/>

Some examples: in South Africa, it was reported that existed a methomyl resistant population. At the same time, in Australia, the CSIRO tested two populations from Western Australia and Queensland and did not detect methomyl resistance. Similarly, a population in Indonesia and a population in Hubei (China) possessed the G227A OP/Carbamate resistance loci; however, in most African, SEA, Australia and China populations tested, this G227A locus was absent.

4. Is FAO supporting emergency registration of effective biopesticides?

Answer: In general, FAO tries to strengthen the long-term capacities of countries in biopesticide registration to go beyond emergency needs.

5. What is the shelf life of a pheromone in a trap? / Shel life of a pheromone in a trap should be stored with air-tight bags? Can we test our pheromones?

Answer: Pheromone lures have an average lifespan of one to two months in traps but should be changed every month - they should be stored in a cool, dry place before being deployed in traps.

Pheromone lures should always be stored in sealed packaging before placing or changing a FAW trap. Different companies provide commercial pheromone lure options formulated with different synthetic FAW pheromone blends. These blends depend on the supplier and may have different attractiveness to FAW populations, different shelf life (for storage), and different trap life. So, it would be best if you also referred to the technical information provided by the suppliers.

Many companies and suppliers supply FAW pheromone lures formulated with synthetic FAW pheromone blends. These blends have different attractiveness to FAW populations

and should be trialed and tested. If your country is still free from FAW, early warning surveillance lure and trap trials in neighboring countries with different lure types can assist your preparedness and readiness for response and delimiting surveillance.

6. *Would you please explain how created maize varieties express their tolerance towards an insect pest with buccal pieces of a crusher type?*

Answer: CIMMYT (International Maize and Wheat Improvement Center) does the work on this. The specific mechanism is unclear, but there are other examples of plant resistance/tolerance against chewing insects, such as those against stemborers in rice and maize. It is also possible that the lines show tolerance by outgrowing the damage due to FAW.

7. *Which research organization would provide for a worldwide recognized proof of workings?*

Answer: Experts are unaware of a research organization that can provide worldwide recognition as different countries have different regulations, especially regarding compounds used to manage agricultural pests.

8. *Can I have trustworthy suppliers around South Africa for traps and FAW specific lures? It is for Mauritius. I usually purchase from Russel Uk. But freight is high*

Answer: Thank you for your question - your RPPPO may have more supplier information (the Australian NPPO uses a pheromone lure supplier from Costa Rica). So you may have a local/regional supplier.

Climate-smart, agroforestry and mays resistance

9. *Are there any success stories about climate smart FAW protocols?*

Answer: Cropping diversification techniques such as certain push-pull techniques, intercropping with leguminous crops may have both FAW management and climate adaptive co-benefits. See <https://www.sciencedirect.com/science/article/pii/S0261219417303216>
<https://link.springer.com/article/10.1007/s41348-020-00401-2>

10. *Is there any experience in controlling the program of FAW in Agroforestry (especially intercropping with corn)?*

Answer: Some evidence shows that including more trees in the farm can increase natural FAW regulation. More information is mentioned in the Annex of our IPM Guide: <https://www.fao.org/3/cb7549en/cb7549en.pdf>.
An interesting review can be found here: <https://www.sciencedirect.com/science/article/pii/S0301479719306097?via%3Dihub>

11. I remarked that farms used to plant maize between palm date trees or even around palm trees. Should we prevent them from doing so to prevent the spread of the pest?

Answer:	If FAW is in the region and has established populations, they will likely spread. Intercropping and a heterogeneous agricultural landscape may help reduce the impact of FAW on the target crop. However, it is not easy to provide exact answers to the impact of FAW in specific agricultural landscapes. Specific field experiments will be needed to provide science-based guidance in most cases.
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12. Is FAW dangerous for forests?

Answer:	While FAW can utilize a broad host range, it typically poses significant risks on annual cereals (maize, sorghum, millet, etc.) and not on forest trees.
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