



BIOSECURITY VANUATU
BIOSECURITÉ DE VANUATU

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INTRODUCTION

Fall armyworm is a newly introduced pest in the Pacific. It is native to the central and north America and adapts better tropical climates. A highly invasive pest that has the ability to destroy a wide variety of crops. In the past three years it has been established in Australia (Jan 2020) New Caledonia (Dec 2020) Solomon Islands (Sept 2021) New Zealand (2022) and recently in Vanuatu (June 2023).

BIOLOGY

FAW can fly long distances up to 100KM per night and has six larval stages. In temperate temperatures the life cycle from egg to adult is 30 days. Female lays eggs in cluster of fifty to hundred and one can lay up to 2000 eggs in her lifetime. In the tropics, we can see 6-12 generations per season.

IMPACTS TO AGRICULTURAL CROPS

Fall armyworm larvae attacks a large number of crops more than 350 plant species but the main targeted crops are corns (Maize), cotton, rice, sorghum, sugarcane, wheat and many other vegetables, fruits including banana, cabbage, capsicum, eggplant, ginger, kumala, onion, potato, tomato and spinach.

(Source: NZMPI Presentation)



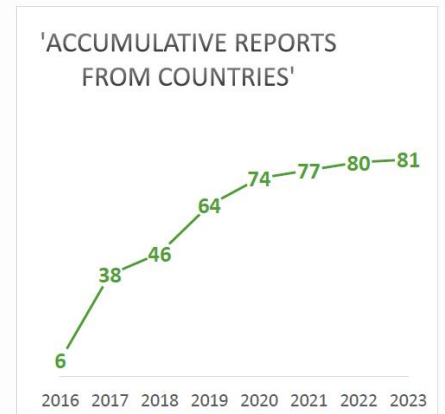
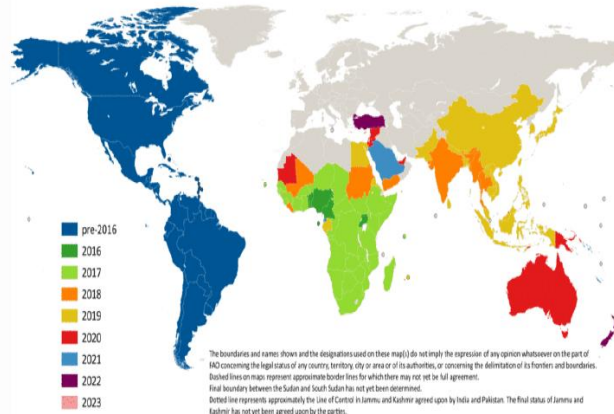
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FAW INVASION HISTORY

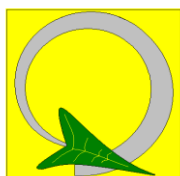
1. Invasion of FAW (2016-2023): *Fastest migratory plant pests in history*



FAW SPREAD IN VANUATU

- FAW was firstly detected and confirmed in July 2023 by MPI Senior Scientist – Ben Boyd
- Preliminary FAW surveillance





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Photo 1: Orange dots marked the islands with presence of FAW

Photo 2: Areas around Efate with FAW present

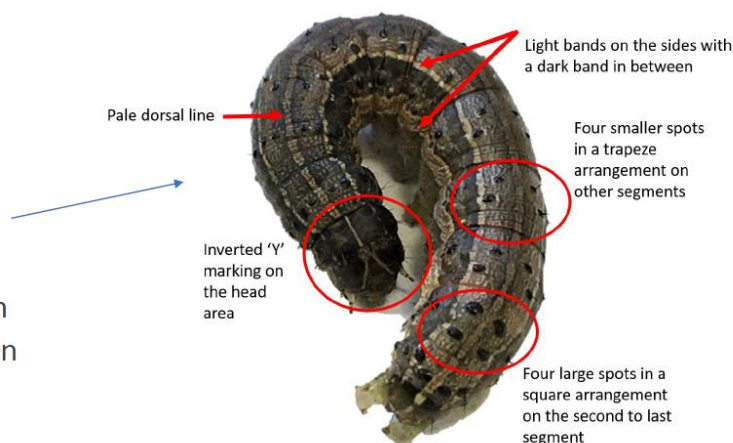
FAW POSSIBLE PATHWAY

1. Relief Supplies after Tropical cyclones
2. Wind Fronts as it is present on neighboring countries New Caledonia and Solomon Islands
3. ???

FAW IDENTIFICATION

Fall armyworm larvae:

- Up to 40mm in length
- The young instars (under 5mm) are not able to be reliably identified
- Mid to late instars (10 to 40mm in length) have the characters shown on the right



Where to look for Fall armyworm?

The Fall armyworm larvae are active eating the host plant:

- Look for holes in leaves
- Mature larvae are in the whorl
- Look for sawdust-like frass matter
- Feeding damage on the corn cob








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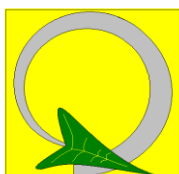
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MOTH SPECIES IN VANUATU

These species of moths can be mistaken for FAW:



<p><i>Helicoverpa armigera</i> (Hubner, 1808) – Tomato fruitworm moth</p>	
<p><i>Mythimna separata</i> (Walker, 1865) – Oriental armyworm</p>	
<p><i>Spodoptera litura</i> (Fabricius, 1775) – Tropical armyworm</p>	



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<p><i>Spodoptera mauritia</i> (Boisduval, 1833) – Tropical armyworm</p>	
<p><i>Spodoptera picta</i> (Guerin-Meneville, 1838) – Lily caterpillar</p>	

How do you identify Fall armyworm larvae?



Fall armyworm



Tomato fruitworm



Tropical armyworm



Oriental armyworm

FAW MANAGEMENT CONTROL

1. FAW Traps setup – Monitoring and servicing
2. Organic pesticide – Neem pesticide, Chilly Mix, Glyricidia Mix and Soursop Mix
3. Intercropping maize with other crops and repellent plants
4. Handpicking FAW larvae used as protein for animal feed



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5. Cultural control – Apply fire ash, sand and crushed charcoal on corn sheath during maize growing stage.
 6. Crop rotation

BIOSECURITY WAY FORWARD TO COMPACT FAW

1. FAW national surveillance throughout Vanuatu
2. Traps will be established in all ports of entries and maize farms
3. Biosecurity Bill to be gazette to allow inter island Quarantine between islands.
4. Regional support for funding with trainings on FAW identification and management in country.

FAW surveillance, monitoring, containment activity in collaboration with DARD (Department of Agriculture and Rural Development)