Fall Armyworm

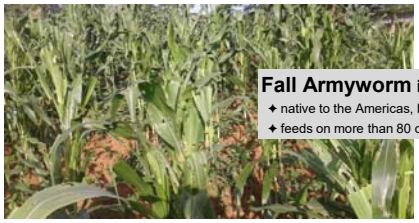
Spodoptera frugiperda



Food and Agriculture Organization of the United Nations

37 million hectares of maize fields in Africa

- ✦ of which 3 million hectares are large-scale producers
- ✦ more than 98% are smallholder family farmers



Fall Armyworm is an insect pest

- ✦ native to the Americas, but now found in Africa
- ✦ feeds on more than 80 crop species, but prefers maize

FAW stages

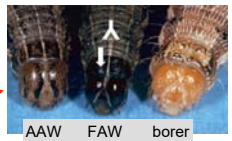


egg mass


caterpillar (larva)

pupa

adult moth



AAW FAW borer

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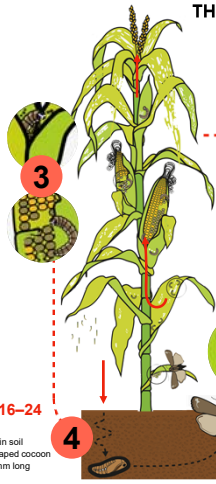
THE FALL ARMYWORM LIFECYCLE

30 days: egg -> larva -> pupa -> moth



DAY 6–15
OLDER LARVA
- Ragged holes in leaves
- Move to whorl (1-2 only)
- Large amount of frass
- Eat into the cob

DAY 3–6
HATCH & YOUNG LARVA
- New larvae feed on leaf underside
- Semi-transparent patches (windows) on leaf
- Spin threads & move to new plants by wind
- Young plants: leaf whorls
- Older plants: leaves around the cob silks
- More active feeding at night

DAY 1–3
EGGS
- 100–200 eggs on young leaves
- Small whitish patches (thumb-sized)
- Near base, close to leaf and stem

DAY 16–24
PUPA
- 2–8 cm in soil
- Oval-shaped cocoon
- 20–30 mm long

DAY 25–30
ADULT
- Adult moth emerges from pupa
- Female lays eggs

FAW found in India

- **1st Observation of FAW on 18 May in Shivamogga, Kamataka**
  (Maize fields at College of Agriculture, University of Agricultural & Horticultural Sciences (UAHS)
- **FAW was confirmed through morphological characters and DNA barcoding**
- **FAW alert was issued on 30 July by ICAR- NBAIR TEAM**
- **Meeting on FAW was convened on20 Aug., chaired by ICAR**

- MOAFW, ICAR-IIMR, ICAR-NBAIR, Representatives from states of Telangana, Karnataka, and Chhattisgarh, FAO-R, CIMMYT, CABI, USAID,
- Breifed Status of infestation by Director, ICAR-IIMR (Karnataka, Telangana, Andhra Pradesh, Chhattisgarh, Tamil Nadu)
- Introduced management options & Implementation by the Director, ICAR-NBAIR
- Discussed follow up actions:
  - **promotion of IPM and biocontrol**
  - **monitoring FAW**
  - **collaboration with international counterparts, etc.**

Challenges to the countries in Asia

- **Potential risk of spread of FAW in Asia**
  - capability of long distance migratory characteristics
  - 80 host plants
  - land-border countries-21 (South Asia, SE-Asia, East Asia)
- **Challenge to food security**
  - 80% of the region's farmlands cultivated by small scale farmers
  - rice and maize-most produced and consumed cereals
  - > 200 million hec. of maize and rice/year in Asia
  - 90 percent of the world's rice is produced, consumed in the Asia-Pacific region
- **Lack of expertise for FAW as it is a new pest**
  - lack of knowledge for identification and dynamic pattern of migration
  - lack of tracking means of movement experience in monitoring and management
- **Requirement of large volume of funding support to countries**
  - capacity development (CD) in field monitoring
  - CD in management (IPM/biocontrol)
  - TOT/FFS

FAO recommendations (based on experience in Africa)

1) **Develop immediate recommendations on FAW management (sharing main FAO findings and FAO FAW IPM Guide, with emphasis on effective low cost options for smallholders)**
2) **Set up Monitoring and early warning mechanism (including a presentation of FAMEWS, and community based monitoring approaches)**
3) **Intensify communication and training campaign (rural radio, print, extension, Farmer field schools…)**
4) **Review needs for specific policy and regulatory support (HHPs, fast tracking of biocontrol agents…)**
5) **Identify short and mid term research priorities based on findings to date;**
6) **Coordination of FAW management in India (creation of national and State level task force, participation of Indian stakeholders in FAO Technical WGs etc).**

RAP actions taken for FAW

- Alert countries in the region for precautions and proactive arrangements (August)
- discuss possible assistance with Indian counterparts (August)
- send references-web link, produced by FAO-HQ on FAW (i.e. factsheet, mobile app-FAW, IPM and FFS guidelines, Q & A, etc.
- Video meeting among RAP, FAOR-R and HQ to discuss the update status, potential actions of collaboration and coordination, tavailable echnical supports and resources, etc. (August)
- briefing the status of FAW in India/region to 18 countries that participated in the APPPC regional workshop on IPPC/APPPC (Sept.) by adding a specific agenda
- distributed video on FAW and biocontrol to countries

The way forward-potential actions

- **Monitoring update status-spread of FAW**
- **Facilitation of information sharing**
- **Encouraging India/countries to use of FAWEWS (FAW early warning system platform)**
- **Provision of technical assistance upon request**
- **Training**
  - TOT for monitoring FAW
  - TOT for IPM and biocontrol of FAW
- **Partnership**
  - Sharing expertise and resources for FAW management and for FFS
  - Multi-lateral collaboration among regions
  - Donor support-funding

MONITORING
(Field scouting + Pheromone trapping)

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EARLY ACTION
(egg squashing, natural enemies, biocontrol)

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ANALYSIS
(Global platform)

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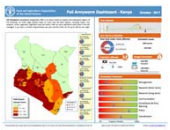
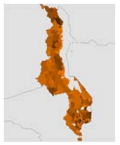
(Global platform)

Learn about FAW ecosystem & ecology
- cropping systems to reduce FAW ?
- planting date ?
- varieties that have less FAW ?
- distribution of FAW in fields ?

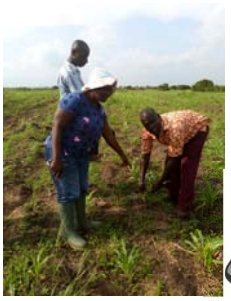


FAW situation & early warning
- current distribution in-country
- area treated
- changes in population levels
- spatial & temporal changes

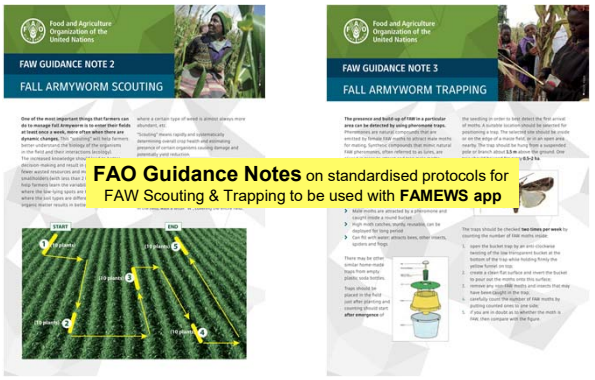


Risk mapping
- identify areas at high risk to FAW
- for national authorities & donors
- uses FAMEWS app data in model

MONITORING = FIELD SCOUTING + PHEROMONE TRAPPING



FAMEWS mobile app
developed by FAO IT-Services



Video presentation on FAW

1. **Scouting for FAW**

https://www.accessagriculture.org/scouting-fall-armyworms

2. **Control of FAW naturally**

https://www.accessagriculture.org/killing-fall-armyworms-naturally