



## Understanding fall armyworm (FAW) *Spodoptera frugiperda*



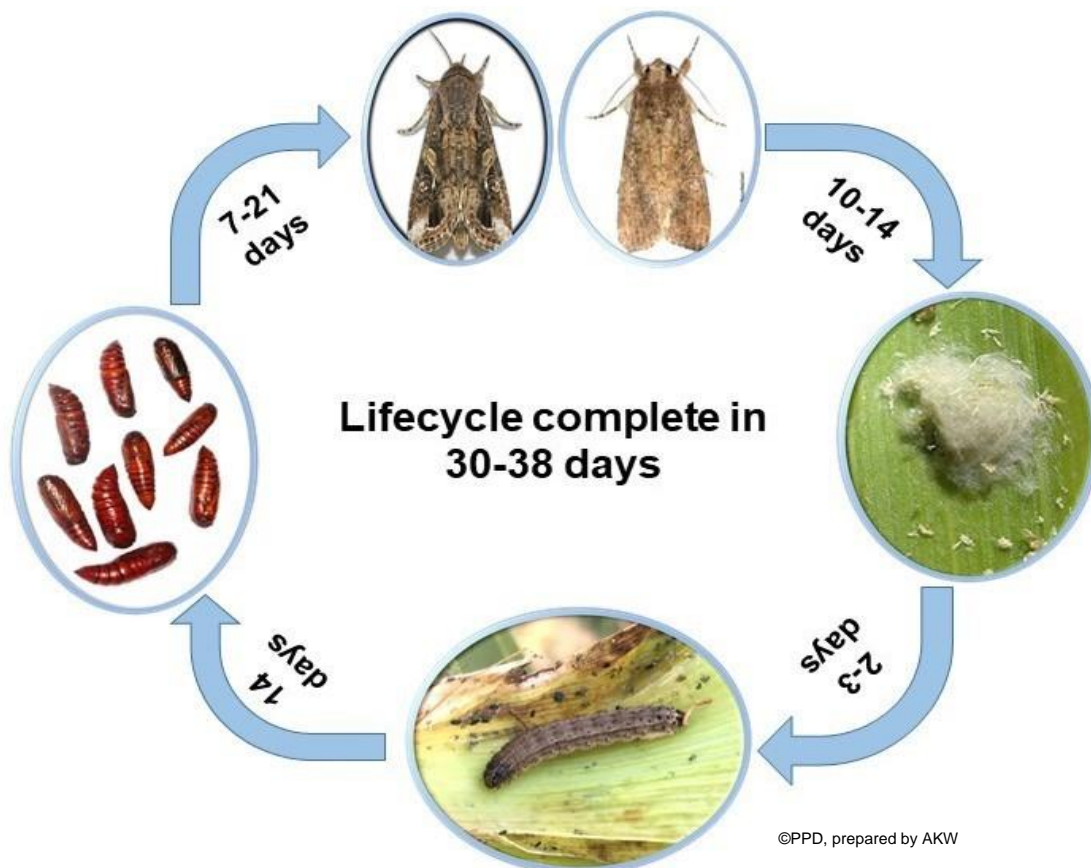
## Origins of FAW and distribution

The fall armyworm is widely distributed in Eastern and Central North America and in South America. FAW was first detected in western Africa in 2016 later spreading to India in 2018. In Myanmar, the first FAW infestation was recorded in winter maize crop in December 2018.

## Host plants of FAW

It is an insect pest of more than 80 plant species, causing damage to economically important cultivated cereals such as maize (sweet corn, seed corn), rice, sorghum, and also to vegetable crops.

## Lifecycle of FAW



## Adults



In the male moth, the forewing generally is shaded gray and brown, with triangular white spots at the tip and near the center of the wing. The forewings of female moths are less distinctly marked.

## Eggs

At the age of three - four days, female moths start to lay eggs and continue until they are 3 weeks old. The number of eggs per mass varies considerably but is often 100 to 200, and total egg production per female averages about 1 500 with a maximum of over 2 000

## Larvae

The FAW typically has six larval instars. The face of the mature larva may also be marked with a white inverted “Y” and the best identifying feature of the FAW is a set of four raised spots that form a square on the upper surface of the second last segment of its body





## **Pupae:**

Pupae are reddish brown and oval in shape and 20 to 30 mm in length. Pupation normally takes place in the soil, at a depth of 2 to 8 cm.

## **Damage Symptoms of FAW**

The pest can affect the crop at different stages of growth, from early vegetative to physiological maturity. After hatching, young larvae will migrate from the plant on which they hatched onto neighbouring plants



Later larval instars chew larger holes, causing ragged whorl leaves, and produce sawdust-like larval droppings, while fresh feeding produce big lumps, and “window-paning” is the most common damage symptom at early whorl. Larvae also move to the ears and tassels.





# Life cycle and damage on maize

## THE FALL ARMYWORM LIFECYCLE

egg -> 6 stages of caterpillar -> pupa -> moth

### DAY 15

• the fully grown caterpillar drops to the ground

### DAY 6–14

- late-instar caterpillars (stage 3–6) move to the protective region of the whorl where it does most damage
- ragged holes result in the leaves
- feeding on younger plants can kill the growing point so no new leaves or cobs develop
- usually only 1–2 caterpillars are found in each whorl as they become cannibalistic when larger and eat each other
- large quantities of frass are present
- when this dries, it resembles sawdust
- in older plants with cobs, the caterpillar will eat into the cob and feed on the developing kernels (seeds)

### DAY 3–6

- after hatching, young caterpillars feed on the leaf underside
- feeding results in semi-transparent patches (windows) on the leaf
- caterpillars spin threads and move to new plants in the wind
- leaf whorls are preferred in young plants
- leaves around the cob silks are preferred in older plants
- feeding is more active at night

### DAY 1–3

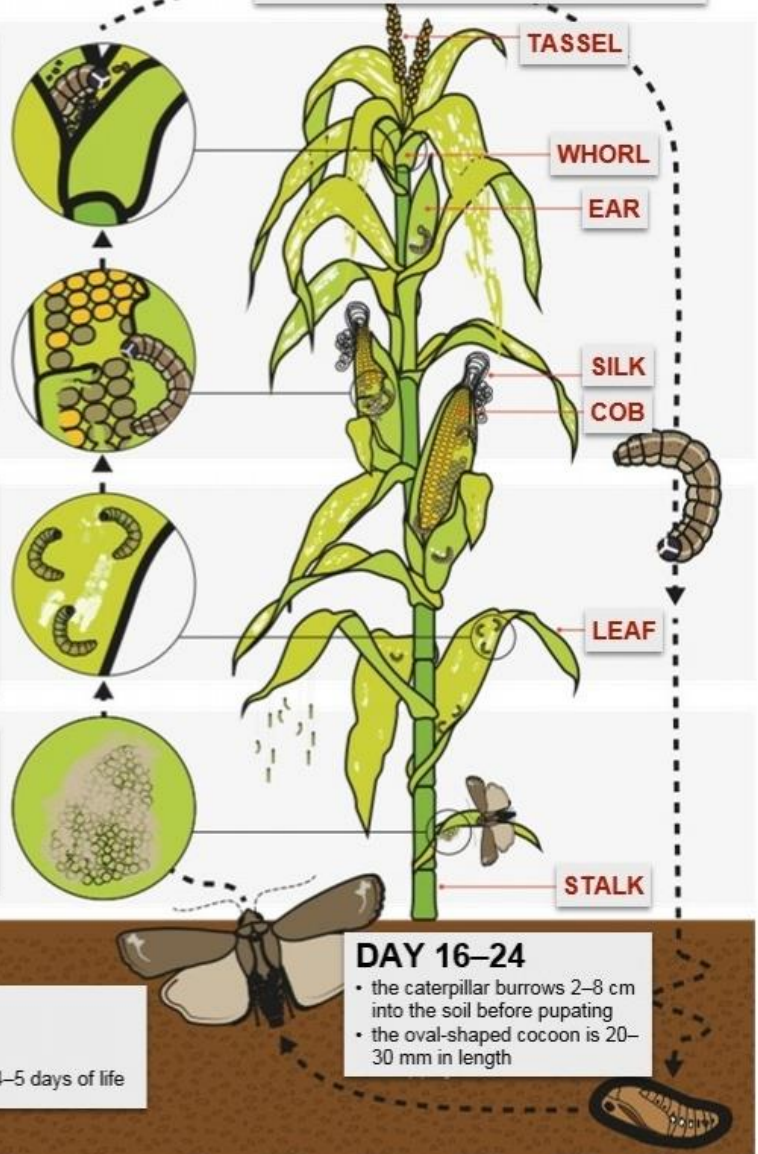
- 100–200 eggs are laid on young leaves
- look for small whitish patches the size of your thumb
- typically near the plant base, close to the leaf and stem

### DAY 25–30

- the adult moth emerges
- the female lays most of her eggs during the first 4–5 days of life

### DAY 16–24

- the caterpillar burrows 2–8 cm into the soil before pupating
- the oval-shaped cocoon is 20–30 mm in length



modified from CABI 2017

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