Life cycle of fall armyworm

Fall armyworm has a four-stage life cycle: eggs, larvae (caterpillars), pupae and adults (moths).

Eggs

Eggs are generally laid on the underside of the leaves. When the population is high, the eggs may also be laid on top of the leaves and the stalk (stem) of young maize seedlings.

- The egg masses are cream, grey or whitish in colour with a hairy covering.
- This mass often contains 100–200 spherical eggs (Figure 6).
- A single female moth produces an average of 1,500 eggs in her lifetime.
- The duration of the egg stage is only 2–3 days during warm conditions.

Eggs on maize leaf © CABI

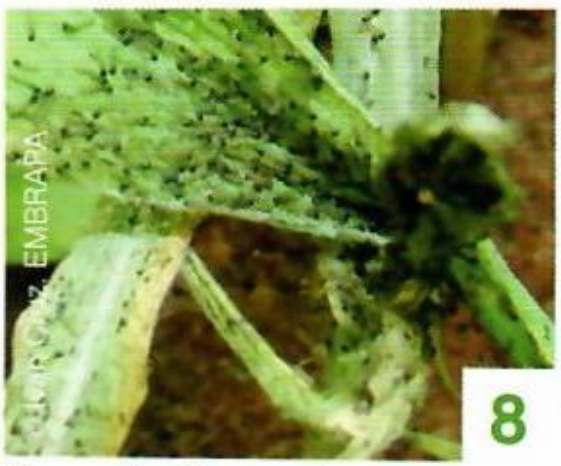
Caterpillars

Eggs hatch into small caterpillars within 3–5 days, and move to the funnel. The small caterpillars can also be carried to other plants by wind (Figures 7–8).

Small caterpillars may appear greenish, while bigger caterpillars vary in colour from orange to green and black or brown (Figure 9-10). Caterpillars mature within 14–22 days (2–3 weeks), after which they drop to the ground to pupate. Up to 12 overlapping generations may hatch in a year.

7

Eggs hatching into caterpillars © CABI



8

Young caterpillars moving towards the funnel

9

Green form of FAW catterpillar
© Matt Bertone, NCSU

10

Brown form of the FAW catterpillar
© Matt Bertone, NCSU

Pupae

The caterpillar develops into a reddish-brown pupa in the soil (Figure 11). This stage is difficult to observe/see. If the soil is too hard during pupation, the caterpillars may web together leaf debris and other material to form a protective covering called a "cocoon" on the soil surface (Figure 13). Pupae may also be found in the maize cob (Figure 12). The pupal stage lasts for 8-9 days when it is warm but can be as long as 20–30 days in colder areas.

11

Pupal stage © Matt Bertone, NCSU

12

Pupa in a maize cob
© Diedrich Visser, ARC

13

Pupa in soil cocoon
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Adults (moths)

Moths are active at night, especially during warm, humid evenings. The dark grey colour of the moths makes them difficult to see, especially when resting near or on the ground, but in some cases when the population is high some may be found resting on the crop in the field.

The male forewing has a conspicuous (visible) white spot. (Figure 15) The duration of adult life is estimated to average 10 days, with a range of 7–21 days.

The female normally lays most of her eggs during the first four to five days of adult life, but some egg laying occurs for up to three weeks.

14

Male moth © Matt Bertone, NCSU

15

Female moth © Matt Bertone, NCSU

DAY 6–14

LARVAL GROWTH STAGES 4–6

By stage 4, the caterpillar will be bigger and have reached the whorl, where it does the most damage, resulting in ragged holes in the leaves. Feeding on young plants can kill the growing point and as a result no new leaves or cobs will develop.

If the plant is older and has already developed cobs, then the caterpillar will eat its way through the protective leaf bracts into the side of the cob, where it begins to feed on the developing kernels (seeds).

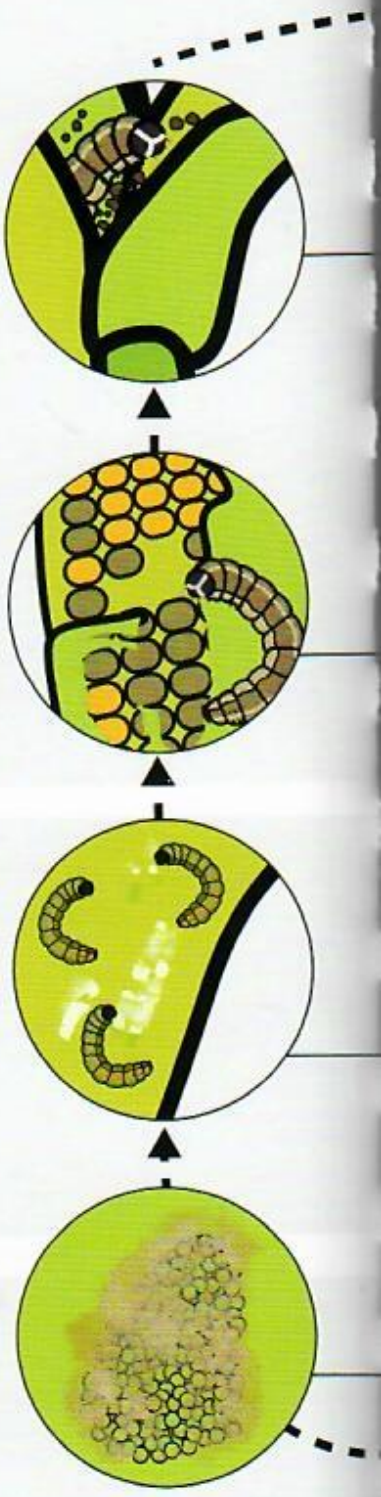
DAY 3–6

LARVAL GROWTH STAGES 1–3

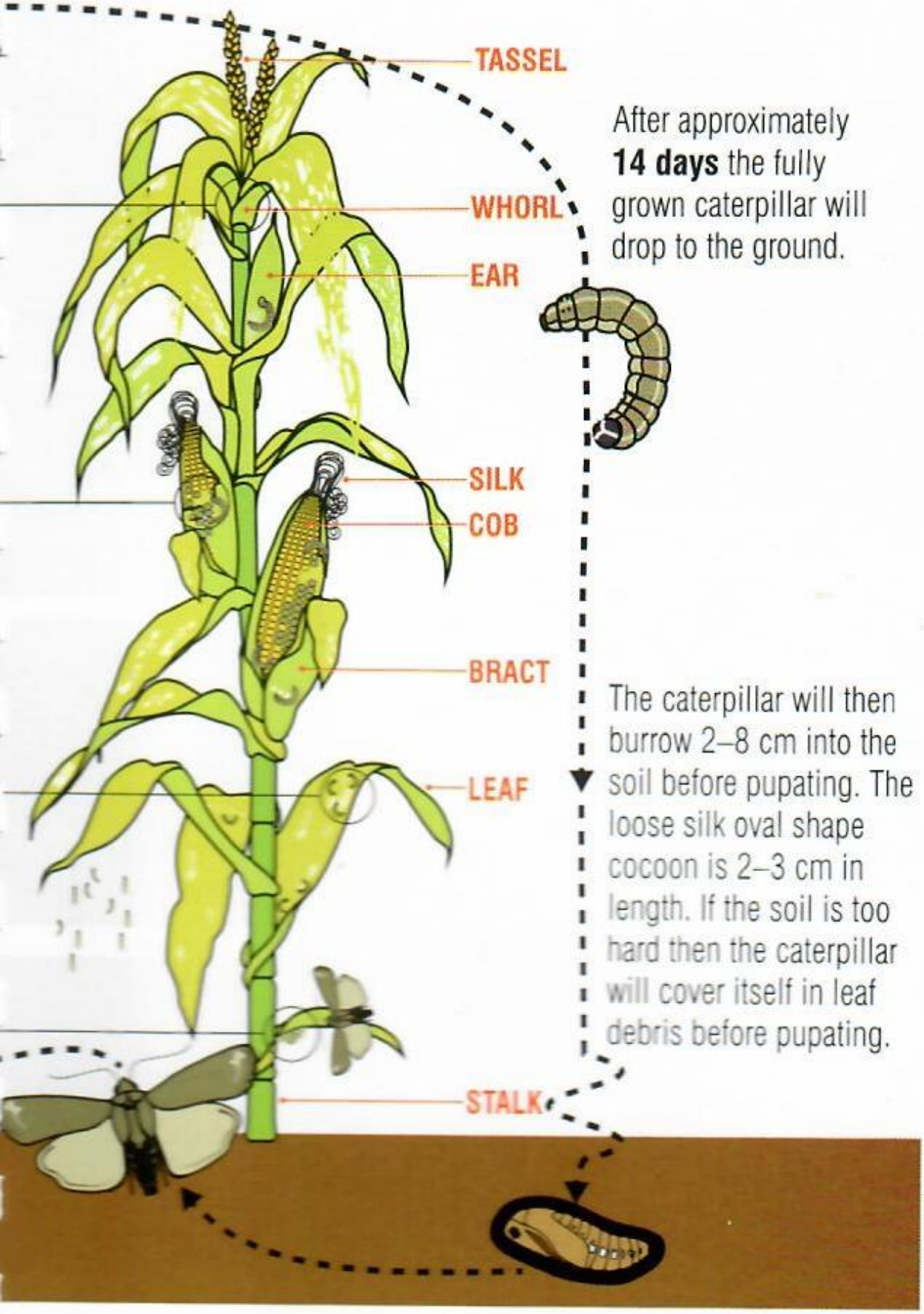
After hatching, the young caterpillars begin feeding, which creates patches on the leaves called windows. Young caterpillars can spin silken threads that catch the wind and transport the caterpillars to a new plant.

DAY 1–3

Batches of **100–200 eggs** are laid on the lower leaves.



After around **8–9 days the adult moth emerges** to restart the cycle.


TASSEL
WHORL
EAR
SILK
COB
BRACT
LEAF
STALK
After approximately **14 days** the fully grown caterpillar will drop to the ground.
The caterpillar will then burrow 2–8 cm into the soil before pupating. The loose silk oval shape cocoon is 2–3 cm in length. If the soil is too hard then the caterpillar will cover itself in leaf debris before pupating.