Suitable conditions and crops for fall armyworm development

Caterpillars will develop in temperatures between 11°c and 30°c, but their optimum temperature is 28°c. In cooler conditions, there may only be one or a few generations per year. Heavy rains may wash off eggs and young caterpillars from the leaf, reducing populations.

Fall armyworm mainly attacks maize. It has also been reported on crops such as rice, sorghum, vegetable and cotton, but to date there has been little damage recorded on these crops.

How to identify fall armyworm damage on maize

Caterpillars feed on maize at nearly all stages of growth from when the plant is young (only three leaves: Figure 16), and also on the cob. Caterpillar damage on the leaves can sometimes be significant and disrupt the plants ability to form good grain and healthy cobs.

Feeding on young maize plant © CABI

Window panes © Diedrich Visser, ARC

Leaf feeding causes extensive "window pane" damage on maize (Figure 17).

Large irregular and elongated holes on the leaves are caused by the big caterpillars while feeding.

Small caterpillars cause the clear or window-like patches while larger caterpillars cause irregular elongated holes on leaves.

Window panes are the most common damage symptoms at early whorl stage; however, they can be confused with damage caused by other stem borers. Look for the actual larvae that is eating the leaves to confirm if its fall armyworm.

Migrating caterpillars © Diedrich Visser, ARC

Usually, many small caterpillars will be present on the same plant, but only one or two bigger caterpillars will be found on a single plant. Others will migrate to feed on neighbouring plants (Figure 18).

Larval droppings © CABI

Bigger caterpillars make larger holes when feeding, causing ragged whorl leaves and producing sawdust-like material called "frass". Fresh feeding produces big lumps of frass (Figure 19).

Badly infested field © CABI

Badly infested fields will have damage on the leaves similar to that caused by a hailstorm (Figure 20).

Whorl damage © CABI

During the day, caterpillars hide deep in the whorls (funnel). They feed inside whorls and can destroy silks and developing tassels on older crops, thereby limiting fertilization of the ear and leading to poor grain development (Figure 21).

Cob damage © CABI

Caterpillars move to the ear zone/funnel and start feeding after tassel emergence. Damage to cobs may lead to fungal infection, aflatoxin contamination and loss of grain quality (Figure 22).

Cobs from infested field © CABI

Cobs that were attacked in the field will have many of the seeds eaten up by the caterpillar (Figure 23).