



Stem borers on maize in Ghana



African maize stalk borer, eggs

Busseola fusca

(Paul-André Calatayud , *icipe*)

- This is the most important stem borer in Ghana affecting maize and sorghum.
- Eggs are round and flattened, creamy-white when laid but darken as they develop. They are laid in batches behind the vertical edges of leaf sheaths of pre-tasseling plants.



African maize stalk borer, neonates

Busseola fusca

(Paul-André Calatayud , CC BY-SA, 3.0 Wikimedia Commons)

- Newly hatched larvae migrate to the whorl where they feed on young terminal leaves.
- First-instar larvae feeding results in producing characteristic patterns of small holes and 'window-panes'.



African maize stalk borer, 5-8th instars

Busseola fusca

(D. Cugala, Stemborer team, *icipe*; Paul-André Calatayud , *icipe*)

- Larvae are creamy-white, lack conspicuous hairs and markings, and grow up to 40 mm. The head is dark brown.
- This stem borer can be confused with species of *Sesamia* which are very similar. However, *B. fusca* does not feed on leaf tissues outside of the whorl whereas *Sesamia* does.



African pink stem borer

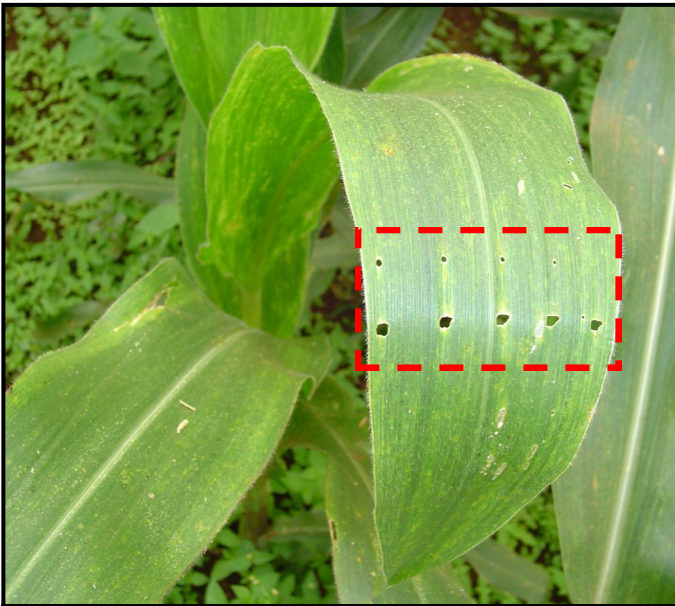
Sesamia calamistis

(Paul-André Calatayud , *icipe*)

- The African pink stem borer is a minor pest of maize in Ghana, but can be misidentified for the African maize stalk borer.
- As *B. fusca*, larvae are creamy-white, lack of conspicuous hairs and markings, and grow up to 40 mm with a dark brown head but has a distinctive pink coloration.
- Larvae tunnel into stem, but do not usually feed on the young terminal leaves which caused the typical "window-panes" of *B. fusca*.



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Early warning signs

Busseola fusca

(CIMMYT)

- Characteristic leaf damage caused by first-instars of *B. fusca*: small holes in straight lines on the youngest leaves.



Window-panes and dead-heart

Busseola fusca

(Paul-André Calatayud, *icipe*)

- **Left:** "Window-panes" damage caused by feeding from the first-instar larvae on tender leaf whorls.
- **Right:** During the early stage of the crop growth, larvae eat into the growing points, which may be killed ("dead-hearts").



Damage in stem

Busseola fusca

(Left: George Mwembe, right: Stemborer team, *icipe*)

- Older larvae tunnel extensively in stems which may weaken stems and cause breakages.
- **Left:** Holes in stem caused by the larva entering the stem.
- **Right:** If the stem is cut open, caterpillars and accumulation of frass are found.



Damage in maize tassel and cobs

Busseola fusca

(Tassel image: CIMMYT, Cob image: Stemborer team, *icipe*)

- Stem borers hidden in damaged maize tassel and accumulation of frass.
- Older larvae also burrow into cobs feeding on the kernels which may seriously affect grain production.