

Maize Stem Borer

Busseola fusca, Chillo partellus, Chillo orichocellelus, Sesamiacalamistis



Stem damage on maize stalk by African Maize Stem Borer (Anne Bruntse BioVision)



Stalkborer larvae (about 8 mm) feeding inside maize stem. Notice brown frass deposits (Anne Bruntse BioVision)

| Prevention | Monitoring | Direct Control | Direct Control | Restrictions |
|---|--|---|---|--|
| <ul style="list-style-type: none"> ◆ Immediately after harvest of previous crop practise early land preparation during dry season to expose the pupa to heat and the predators. ◆ Use plant tolerant varieties like; KDH4SBR, KDH5, KEMBU 214, EMB 0702, KATEH 2007-3, MTPEH 0703 varieties for mid altitude, H614 D for higher altitude ◆ Crop rotation with either root crops or legumes other than sorghum and pearl millet. Rotating with legumes improves soil nutrients and maize plants' ability to tolerate stem borers ◆ Plant early in rainy periods ◆ Intercrop with legumes ◆ Use push-pull strategy: Plant <i>Desmodium</i> in between maize rows to repel stalk borers from the maize. Plant Napier grass along the borders of the maize as a trap crop to pull stalk borers away from the maize. ◆ After harvest, destroy crop residues(e.g. old stalks) in order to kill larvae and pupae in stems OR chop the plants and feed to livestock or make silage, incorporate into the soil. This kills the pupae in the old stems to prevent carry over population the following season | <ul style="list-style-type: none"> ◆ Three weeks after planting, begin inspecting maize plants two times per week. Continue inspecting plants until flowering ◆ Observe plants for holes in leaves and dead hearts ◆ Consider carrying out early controls when 3 – 10% of young plants in population are damaged ◆ In the later stages of the infestation, larvae bore into upper maize stalks and dead-heart symptoms appear. At this stage, control measures are too late because larvae are protected inside the stalks | <ul style="list-style-type: none"> ◆ Early control of young larvae that have not yet entered stalks ◆ Put handful of soil onto into leaf funnel of infested plants- this suffocates the larvae as rain seals the soil ◆ Put one bottle cap of ash dust into leaf-funnel of young plant ◆ Grind Tephrosia and put one pinch at the funnel of the plant ◆ Apply ground Neem powder – a pinch per plant onto the funnel of young plants ◆ Apply hot pepper + Ash – rate 50gm/2kg ash and put a pinch per funnel onto young plants at knee height | <ul style="list-style-type: none"> ◆ Deltamethrin 25g/L | <ul style="list-style-type: none"> ◆ Deltamethrin (WHO Class II). ◆ Toxic to aquatic organisms. ◆ Do not spray near water sources. ◆ High risk to bees and other arthropods. Do not spray to flowering plants. |
| | | | <ul style="list-style-type: none"> ◆ Bacillus thuringiensis | <ul style="list-style-type: none"> ◆ WHO III (slightly hazardous) |
| | | | <ul style="list-style-type: none"> ◆ Trichlorofon 2.5% m/m | <ul style="list-style-type: none"> ◆ WHO II (moderately hazardous) ◆ Mode of action: Organophosphates |
| | | | <ul style="list-style-type: none"> ◆ Chlorpyrifos 480g/L or 40.8% m/m) | <ul style="list-style-type: none"> ◆ WHO II ◆ Mode of action: Organophosphate ◆ Pre- harvest interval 21days ◆ MRL 0.02mg/kg |
| | | | | <ul style="list-style-type: none"> ◆ Always use PPE and follow the instructions on the product label (dosage, timing of application and Pre- Harvest Interval) |



Kenya

CREATED/UPDATED: July 2013

AUTHOR/S: Margaret Mulaa (CABI), Miriam Otipa (KARI), MaryLucy Oronje (CABI), Eunice K. Ringera (KEPHIS)

EDITED BY: Erica Chernoh (CABI-CH) and Melanie Bateman (CABI-CH)

LOSE LESS, FEED MORE

Plantwise is a CABI-led global initiative. www.plantwise.org

