PEST MANAGEMENT DECISION GUIDE: GREEN AND YELLOW LIST

Maize Stem Borer

Busseola fusca, Chilo partellus, Chilo orichalcociliellus, Sesamia calamistis

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

- Immediately after harvest of previous crop, practise early land preparation during dry season to expose the pupa to heat and predators
- Plant tolerant varieties such as KDH4SBR, KDH5, KEMBU 214, EMB 0702, KATEH 2007-3, MTPEH 0703 varieties for mid altitudes
- Rotate with root crops or legumes which improve soil nutrients and maize plants' ability to tolerate stem borers. Avoid alternate hosts such as sorghum and pearl millet
- Plant early in rainy periods
- Intercrop with legumes
- Use push-pull strategy: Plant *Desmodium* 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) to kill larvae and pupae in stems.
- Chop the plants and feed to livestock, make silage or incorporate into the soil. This will kill the pupae in the old stems to reduce more population the following season

Monitoring

- 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

Direct Control

To control young larvae :

- Put handful of soil into leaf funnel of infested plants- this suffocates the larvae
- Put one bottle cap of ash dust into leaf-funnel of young 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 knee-high young plants

Direct Control / Restrictions

- Note: In the later stages of 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

Direct Control	Restrictions
◆ Spray with Deltamethrin based products such as Farm-X, Atom 2.5EC, and Decis 2.5EC at 10-15mls/20L of water	◆ WHO Class II (Moderately hazardous) ◆ PHI 3 days ◆ Toxic to aquatic organisms ◆ Do not spray near water sources ◆ High risk to bees and other arthropods. Do not spray to flowering plants
◆ *Bacillus thuringiensis*	◆ WHO Class III (Slightly hazardous)
◆ Spray with Trichlorfon based products such as Dipterex 95SP at 15-20gms/20L of water. ◆ Mode of action: Organophosphate	◆ WHO Class II (Moderately hazardous) ◆ PHI 3 days
◆ Grind *Tephrosia* and put one pinch at the funnel of the affected plant ◆ Natural contact insecticide	◆ Rotenone is one of the active ingredients in *Tephrosia* plants ◆ Rotenone: WHO Class II (Moderately hazardous) ◆ Toxic to aquatic organisms
◆ Spray with Chlorpyrifos based products such as Bullet 48EC and Dursban 4EC at 50 -100 ml/ 20Lof water ◆ Mode of action: Organophosphate	◆ WHO Class II (Moderately hazardous) ◆ Pre-harvest interval 14 days ◆ MRL 0.02mg/kg

- Always use PPE and follow the instructions on the product label (dosage, timing of application and Pre-Harvest Interval)

REPUBLIC OF KENYA

Kenya

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