## PEST MANAGEMENT DECISION GUIDE: GREEN AND YELLOW LIST

### African armyworm in maize

*Spodoptera exempta* (syn. *Agrotis exempta*)
Black armyworm in English, Ntchembezandonda in Chichewa language

#### Prevention
- Plant early since late planted crop suffers severe damage by second generation armyworms.
- Keep the field free of grassy weeds as young grasses are food for young caterpillars.
- Keep flowering broad-leaf plants around the fields as they host natural enemies of armyworm.

#### Monitoring
- Outbreaks mostly occur after the first rains when grasses have started growing.
- Look for caterpillars with velvety black shiny head with inverted V-shaped mark on the head and white strips along the sides and the back.
- Look for translucent caterpillars hanging on green maize/grass which turn green after feeding.
- Damaged crop is ragged, leaving only midrib in severe cases.
- Male moth catches in pheromone traps at agricultural offices and village monitoring centres (≥30/week) in the presence of green grass and rainfall (≥5mm/week) indicate a likelihood of outbreak in an area. Farmers should check fields and report caterpillar presence to agricultural agents.
- Get forecast updates from community and government forecasters and control if caterpillars are frequently found in the field.

#### Direct Control
- Mechanically pick and crush caterpillars from the field.
- Dig 30cm deep trench around the maize field to trap marching caterpillars and destroy them by crushing or burying.
- Shallower trenches may aid pupation if mature (6th instar larvae) are buried.
- Crush 5 litre container full of mature neem leaves (soak for 24 hours in 5 litre water then sieve) and apply liquid to young caterpillars.
- Spray chlorpyrifos based products (organophosphates) such as Dursban, Chlorban, Chlorpyrifos 500EC and others to the caterpillars.
- Spray deltamethrin based products (pyrethroid) such as Deltanex EC, Decis 50 EC, Decis Forte and others to the caterpillars.

#### Direct Control
- Normally spray only once per outbreak choosing one of the following products. The pre-harvest interval includes any intercropped crops in the treated field.
- When using a pesticide or botanical, always wear protective clothing and follow the instructions on the product label, such as dosage, timing of application, pre-harvest interval, max number of sprays, restricted re-entry interval. Do not empty into drains and water sources. Always consult recent list of registered pesticides from the Pesticide Control Board (PCB) of Malawi.
- WHO class U (Unlikely to present acute hazard in normal use); pre-harvest interval p.h.i. 3 days; restricted re-entry interval r.e.i. 1 day. Toxic to predatory mites and flower bugs that prey on armyworm eggs.
- WHO class II (Moderately hazardous); p.h.i. 21 days; r.e.i.1/2 day. Toxic to bees and aquatic organisms.
- WHO class II (Moderately hazardous); p.h.i. 7 days; r.e.i.1/2 day. Toxic to bees and aquatic organisms.