

NORTH WEST DEPARTMENT OF AGRICULTURE AND RURAL DEVELOPMENT AGRICULTURAL SUPPORT SERVICES

Presentation title: INSECT PESTS OF GRAIN CROPS

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1. maize stalkborer, *Busseola fusca*,

The maize stalkborer, *Busseola fusca*, is the most serious insect pest of maize in South Africa, and has caused enormous crop losses (estimated at more than 10% of the national crop).

The use of pheromone moth traps has greatly enhanced timeous spraying against this pest.



Control measures

1. Trap crops

Early maize in fairly large blocks, reasonably spread around the farm, will entice the spring moths to lay their eggs before the main crop is up. The trap crop must be used for silage before the second generation develops.

2. Clean culture

The hibernating larva is the weak link in the life-cycle. Tillage reduces subsequent stalkborer threat.

3. Chemical control

Insecticide should be applied at the funnel stage, when small shot-holes are evident in the youngest leaves and borers have not yet migrated into the stalks, or seven days after eggs have been found on 2,5 percent, or more, of the plants.

Many insecticides are registered for early corrective post-emergence treatment. If late corrective treatment is required, i.e. when the larvae have started to tunnel into the stem and 10 percent, or more, plants show shot-hole damage, a systemic insecticide may be used.

Pre-emergence preventative treatments involve applying insecticide to the soil together with the seed. These treatments are very expensive, and should be contemplated only if a moderate to high yield of maize is expected.



2. Black Maize Beetle

The black maize beetle, *Heteronychus arator*, affects a wide variety of crops, including maize, sorghum, wheat, ryegrass and oats. Symptoms are sometimes confused with cutworm damage. Although it occurs virtually throughout S.A., there are certain areas in which it assumes plague proportions. It seems to favour cooler areas and sandy soils.

Beetles crawl out of the ground in the evenings or on overcast days. Exit holes are clearly visible. The beetles search for maize plants, crawl in to the soil when they are near the plant and begin to feed on it. If a plant that is under attack is dug up, the beetle is usually found feeding on it. A typical symptom is the dying off of the crown of the plant. Malformed structures re-grow.



Control measures

1. Cultivation

Because the larval stage is very sensitive to disturbance, partial suppression of insect numbers might be obtained by cultivation during September and October.

2. Chemical control

various insecticides can be used.



3. American Bollworm

It attacks maize cobs. The moth measures about 30 mm across the wings and is variable in colour, ranging from dull yellow to a dark brown. The larva also varies in colour from green and pink to dark green and black. Along its sides there are always white lines, which are more or less characteristic.



Control measures

1. Cultural control

Maize lands should be kept free of weeds.

2. Chemical control

The cobs should be regularly inspected for the presence of cobworms. A full-cover application of a registered insecticide, directed towards the cobs, might be necessary



4. Army Worm

Important factors that influence these outbreaks are temperature and the presence of young succulent grass. High-pressure weather-patterns over central-east Africa are believed to be influencing factors. The caterpillars can feed on grass only, mainly sweet grasses. When more mature they will attack any kind of grass and particularly maize plants.



Chemical control

A full-cover application of a registered insecticide, is necessary (Benfuracarb/Fenvalerate, Carbosulfan, Chlorantraniliprole, Chlorantraniliprole/Lambda-cyhalothrin, Chlorpyrifos etc)



5. Maize Snout Beetle

The common name, maize snout beetle, refers to several kinds of closely-related weevils which feed on the leaves of young maize plants. There are four different species that cause the most loss, and others that are occasionally troublesome. The four major species are *Tanymecus destructor*, *Systates exaptus*, *Mesoleurus dentipes* and *Protostrophus* spp. None of these fly. Once a land is infested trouble can be expected year after year.



Cultural control

Maize lands should be kept free of weeds.

Chemical control

application of insecticides is recommended.

