



# FIELD BUDS

# Maize Pests

**Insect pests are generally regarded as destructive in proportion to the number present and in competition with man (Metcalf & Williams, 1982).**

There are more than 300 species of pests that attack field crops, like maize, with the top 30 seriously limiting maize production (Myburg et. al., 1989). In Africa, insect pests attacking maize are mainly endemic; moving from natural grass. The most important of these pests belongs to the order Lepidoptera, with maize stalk borer being the most destructive.

During the 2016/17 season, the Fall armyworm (also order Lepidoptera) had been detected and confirmed in various Southern African countries, and is now also considered an important pest to many maize growers.

## Cutworm *Agrotis spp.*

<b>Identification (Larvae)</b>	Larvae are smooth, waxy-looking and hairless, up to 35 mm long. Brownish grey to black in colour. Characteristically curl up in a "C" when handled.
<b>Symptoms</b>	Cuts through the stem of young plants at ground level causing the total loss of the plant. They eat little of a single plant and might move to adjacent plants resulting in a few plants destroyed at a time. In older plants a clean hole can be seen at or just beneath the soil surface. In this case first symptoms are wilted plants during the heat of the day.
<b>Control</b>	Presence is directly correlated to weed presence as well as old plant debris. Fields should be free of any plants for at least 6 weeks as larvae have the ability to survive for long periods without food. Broadcast applications with <b>Decis® Forte</b> or <b>Bulldock®</b> will be more efficient than band applications as infestations may occur between the rows.
<b>Remarks</b>	Larvae feed mostly at night and hide during the day in the soil near the wilted plants.



Photos supplied by: D. Visser ARC-VOP

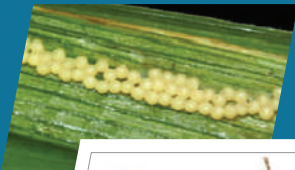


Cutworm

# Maize Stalk Borer

## *Busseola fusca* (Fuller)

<b>Identification (Larvae)</b>	Larvae vary in colour from creamy white, light brown to pinkish brown with rows of small black dots along the side of the body. No obvious hairs are present.
<b>Symptoms</b>	If larvae feed on the young unfolded leaves it's known as the "top grub". Feeding damage of the whorl may look like shot-gun damage as the leaf unfolds. Older larvae move down the stalk where it can destroy the growth point leading to dead heart symptoms. Infestation of the cob and enveloping leaves may lead to economic damage to the young seeds.
<b>Control</b>	Remove plant debris by deep ploughing or slashing the stubble as it may harbour pupae. Start scouting for pest presence if plants are in V4 - V6 stage and apply <b>Bulldock®</b> or <b>Decis® Forte</b> if more than 10 % infestation is present.
<b>Remarks</b>	Plants between V0 and V6 stage are the most attractive for eggs to be laid on between the leaf sheaths and stalk. In older plants eggs are laid externally along the edge of the new growth (found around the cob). First flight during the last quarter of each year with the main flight in November.



Maize Stalk Borer

Photos supplied by:  
D. Visser ARC-VOP & EA Erasmus ARC-GCI

# Chilo Borer

## *Chilo partellus*

<b>Identification (Larvae)</b>	The larvae are 24 - 28 mm long, pale dirty white or yellowish brown with several distinguishing dark spots on each segment.
<b>Symptoms</b>	Young larvae prefer to feed inside the whorl of the plant. First indication is small windows on the youngest whorl leaves very similar to those of Maize Stalk Borer and Fall armyworm. Older larvae will feed into maize stalk or ear.
<b>Control</b>	BT maize is very effective in reducing the damage of this pest. Further action should be taken when 40 % plants show indications of this pest. Planting after the first moth flight can also limit infestations. Start scouting for pest presence if plants are in V4 - V6 stage and apply <b>Bulldock®</b> or <b>Decis® Forte</b> if more than 10 % infestation is present.
<b>Remarks</b>	There are two main flights per annum, firstly between September - October and secondly between February - March. Most (2/3) of the eggs are laid on the upper surface of the leaf and the rest on the underside. Young larvae are attracted to light and therefore you find them on top of the plant.



Chilo Borer

Photos supplied by:  
D. Visser ARC-VOP, EA Erasmus ARC-GCI

# Fall Armyworm

*Spodoptera frugiperda*

<p><b>Identification (Larvae)</b></p>	<p>Larvae can be found on all above the ground plant parts, mostly on the underside of leaves. Occasionally larvae may bore into plant parts. Their colour varies from green to dark green, pinkish, brown or dark brown with paler green longitudinal stripes. <b>The larvae have three distinguishing markings that can be used for identification namely:</b></p> <ol style="list-style-type: none"> <li>1. An inverted Y on the head.</li> <li>2. Four dark spots in a square clearly visible on the eighth segment.</li> <li>3. Four spots in a trapeze arrangement on the body with a lighter dorsal and darker lateral area of the body.</li> </ol>
<p><b>Symptoms</b></p>	<p>Symptoms caused by larvae consist of holes in leaves along with the presence of frass. Early stages can be found scraping the epidermis of the underside of the leaves to create a window-like appearance of the feeding marks. Young plants of maize (up to an age of 30 days) can be cut through at the base, similar to symptoms caused by cutworms.</p>
<p><b>Control</b></p>	<p>Scouting of 20 plants in five locations, or 10 plants in 10 locations, is generally considered to be adequate to assess the proportion of plants infested. If more than 5 % of the plants show egg masses or larvae presence, a control strategy should be implemented by using a registered insecticide.</p>
<p><b>Remarks</b></p>	<p>Cool, wet springs followed by warm, humid weather in the overwintering areas favour survival and reproduction of Fall armyworm, allowing it to escape suppression by natural enemies.</p>



Fall armyworm

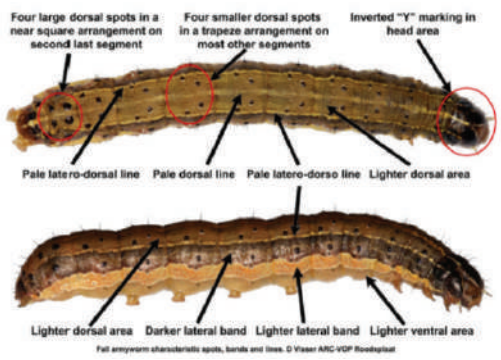
Photos supplied by: D Visser

## Tip How to differentiate between Lepidopteran and Coleopteran insects?

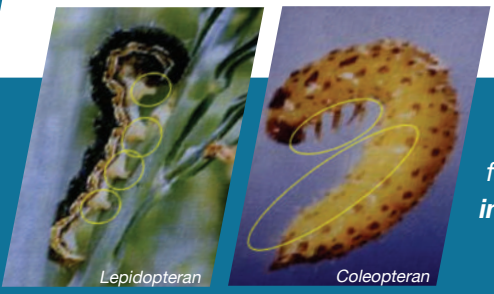
### FAW: characteristic marks on caterpillars



Fall armyworm characteristic marks. © Visser ARC/VOP Rooibosplant



Fall armyworm characteristic spots, bands and lines. © Visser ARC/VOP Rooibosplant



Lepidopteran

Coleopteran

These groups can be distinguished by the presence of feet on the front portion of **Coleopteran insects**, whilst the **Lepidopteran insects** have pseudopodia.



# Management

## Bayer program

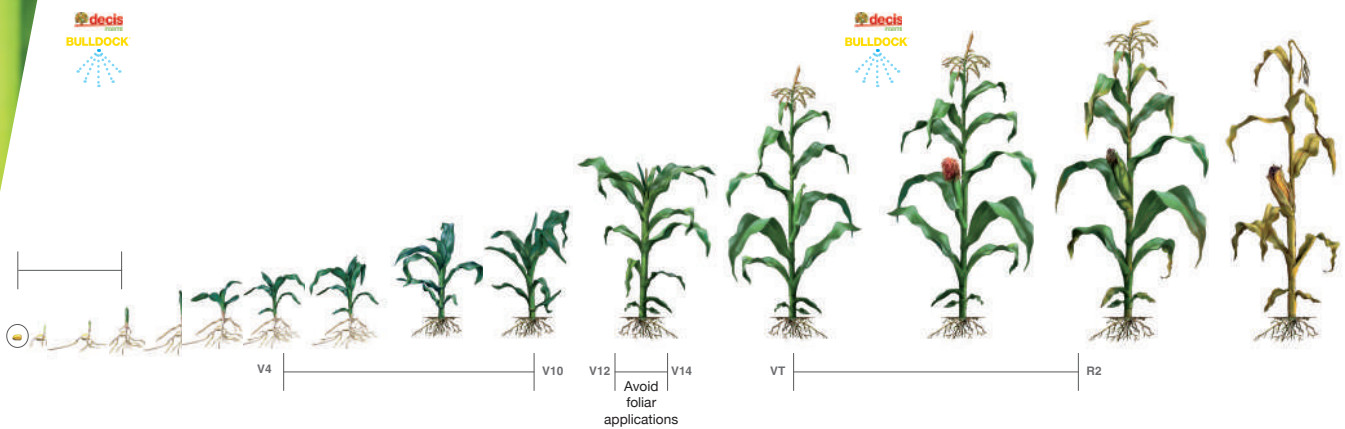
**WINDOW 1**  
Decis® of Bulldock®

**WINDOW 2**

**WINDOW 3**

**WINDOW 4**  
Decis® of Bulldock®

**WINDOW 5**



Plant - emergence

2 leaves unfold – V8

V8 – V12

Flowering – end of flowering

All kernels have reached final size

YieldGard2 effectively controls maize stalkborer and fall armyworm.



Bayer (Pty) Ltd. Reg. No 1968/011192/07  
27 Wrench Road, Isando, 1601  
PO Box 143, Isando, 1600  
Tel: +27 11 921 5002

| @Bayer4Crops

[www.cropscience.bayer.co.za](http://www.cropscience.bayer.co.za)  
[www.bayer.co.za](http://www.bayer.co.za)

**Bulldock®** Reg. No. L4540 (Act No. 36 of 1947). **Bulldock®** contains Beta-cyfluthrin.  
**Decis® Forte** Reg. No. L6563 (Act No. 36 of 1947). **Decis® Forte** contains Deltamethrin (Harmful). **Bulldock®, Decis® Forte** are registered trademarks of Bayer AG, Germany. Use strictly according to instructions on label.

Facebook: Bayer Crop Science Division Southern Africa // // // Twitter: @bayer4cropssa

02/2020