

## Maize Armyworm and Stalk Borer Scouting

The introduction of Fall Armyworm (FAW) (*Spodoptera frugiperda*) to Africa in 2016 has raised concerns of possible widespread damage of maize and other crops. Stalk borers are a common pest of maize throughout Africa, causing modest damage virtually every year. Armyworms, on the other hand, can devastate maize and other crops if not controlled at a young age. Because of this big difference in damage potential, it is important to identify these pests early in their life cycle.

### Distinguishing Armyworms and Stalk Borers

Armyworms have a light cream to yellow colored, inverted "V" on their heads (Figure 1). Stalk borers have an inverted "V" but it is darker in color. In addition, the FAW has a sets of 4 spots on each body segment that distinguish it from the African Black Armyworm (*S. exempta*). These spots are arranged in a square on its 2<sup>nd</sup> to last body segment, but in a trapezoid shape on the other body segments.

It is very difficult to distinguish between FAW and other caterpillar species based on color alone, since the color of each species can vary significantly (Figure 2). Nonetheless, to manage FAW, you need to find and treat them when they are young (e.g. less than 15 mm long).



**Figure 1.** Stalk borer (top) and Fall Armyworm (bottom): Note difference in color of the inverted "V" on head capsules and the square of spots (red arrow) on the rear segment of the FAW

During the first half of their life, the caterpillars feed on the surface of the plant, or in the upper part of the funnel. As they get larger, they enter deep into the funnel, or bore into the stalk or cob where they're much more difficult to control because sprays can't reach them there. In order to identify caterpillars when they are very small, you should use a magnifying glass.



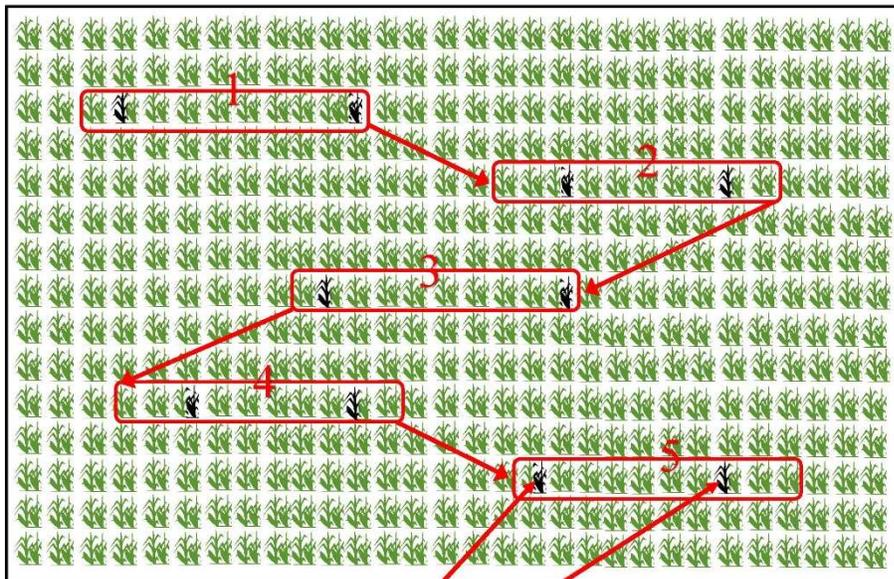
**Figure 2.** Variation within species can make them difficult to distinguish based on color alone.

## Scouting Procedures

- Beginning when the maize is 20 cm height,** inspect 20 consecutive plants in each of 5 areas of the field (**Figure 3**). Count the number of plants with leaf feeding and the number of FAW egg masses (**Figure 4**) found. At each location, examine the first and the last plant with caterpillar feeding, and count the number of stalk borers and armyworms on each one. Pull out, carefully unroll, and examine the whorl leaves as well as the developing cobs.

### Fall Armyworm Field Scouting

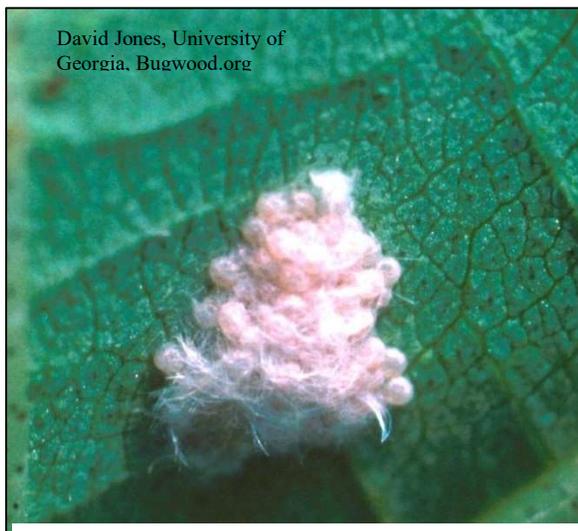
Examine 20 plants in each of 5 locations for feeding damage or FAW eggs:



In each location, count the caterpillars in the first and the last plant with feeding damage. Be sure they are FAW and not stalk borer!!!

**Figure 3.** Scouting procedures for maize caterpillars.

- Record** the total number of plants with feeding, the number of plants with egg masses or live caterpillars, and their approximate size (in mm).
- Action thresholds for spraying:** multiply the % of plants with feeding x the % of plants with live larvae. If the product is higher than the following action thresholds, treat the crop with an insecticide:
  - From emergence to 8 leaf stage: 20%
  - From 8 leaf stage to tasseling: 40%
  - From tasseling to maturity: do not spray (it's too late to be effective)



**Figure 2.** Fall Armyworm eggs are white with a cottony covering

- If you decide to spray, **help your neighbors scout** and treat their fields as well or the armyworms may move from their crop to yours!
- Scout again a few days after treating** and use another insecticide if the first is ineffective.

## Appendix 1: Scouting Record form

<b>Name of Farmer:</b>					
<b>Date:</b>					
Location (20 plants)	No. of plants with damage	No. of plants with FAW eggs	No. of FAW caterpillars per 2 plants	No. of stalk borers per 2 plants	Size of FAW caterpillars (in mm)
1					
2					
3					
4					
5					
<b>Totals</b>					

<b>Name of Farmer:</b>					
<b>Date:</b>					
Location (20 plants)	No. of plants with damage	No. of plants with FAW eggs	No. of FAW caterpillars per 2 plants	No. of stalk borers per 2 plants	Size of FAW caterpillars (in mm)
1					
2					
3					
4					
5					
<b>Totals</b>					

<b>Name of Farmer:</b>					
<b>Date:</b>					
Location (20 plants)	No. of plants with damage	No. of plants with FAW eggs	No. of FAW caterpillars per 2 plants	No. of stalk borers per 2 plants	Size of FAW caterpillars (in mm)
1					
2					
3					
4					
5					
<b>Totals</b>					