# How to monitor fall armyworm in the field

The aim of monitoring is early detection of the egg batches or small caterpillars, which are easier to control. Monitoring should begin early after the emergence of the crop.

Two methods can be employed for monitoring:

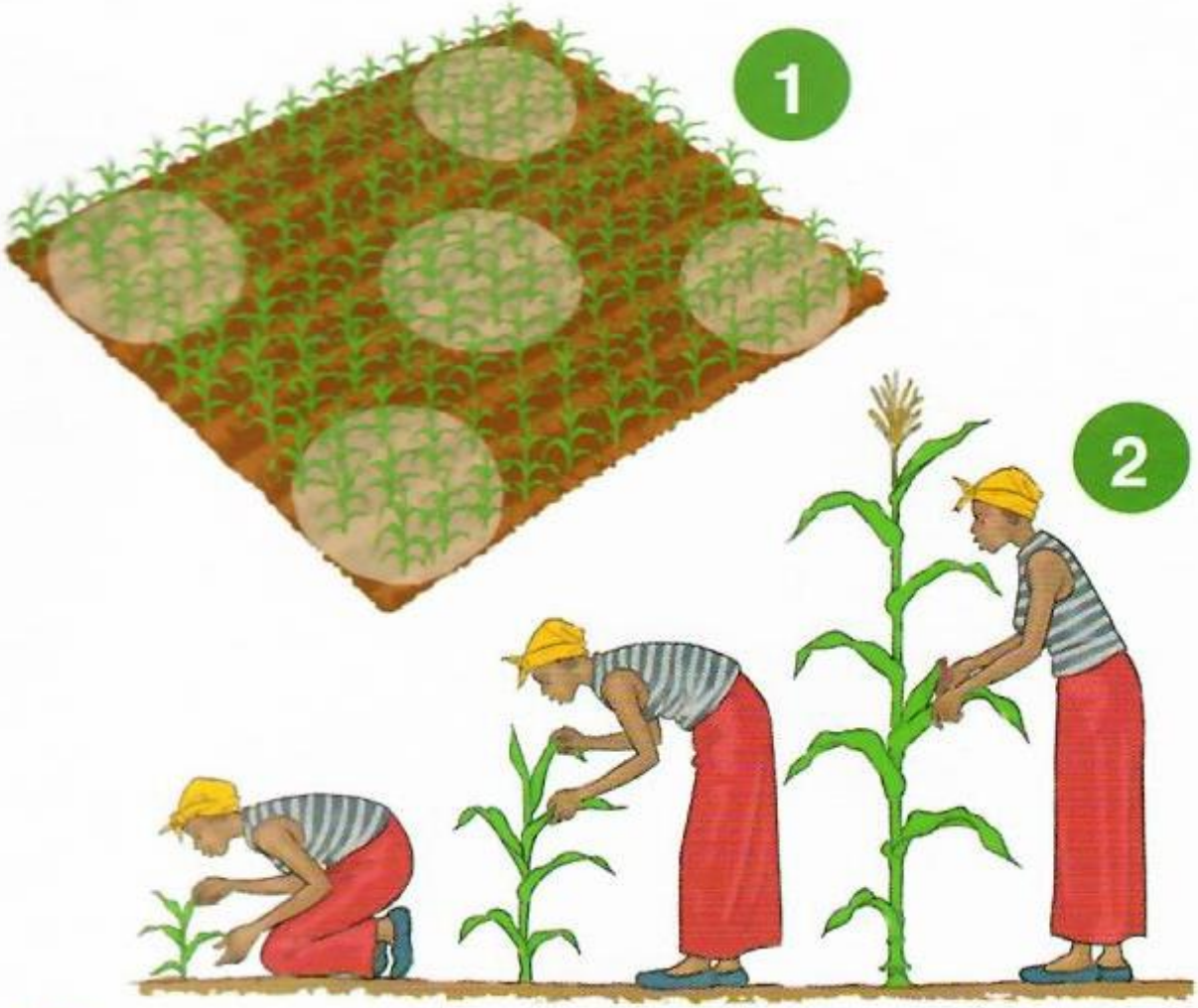
1. **field scouting**
2. **pheromone traps**

In both cases, the Fall Armyworm Early Warning System (FAMEWS) should be used. FAMEWS is freely available for any low-cost Android 5.0 or higher smartphone from the Google Play store.

You can download and install the FAMEWS application on your smartphone for regular use in monitoring fall armyworm in your area, and use it obtain data from neighbouring areas if other farmers or extension workers are using it. The App also has an image recognition feature that can help to identify fall armyworm if in doubt.

## Procedure for scouting for fall armyworm eggs, caterpillars and feeding damage

1. Randomly select five plots, each comprising 10 consecutive plants in a row. Examine each selected plant within the plot.
2. Look for signs of fall armyworm eggs; feeding by small caterpillars, such as pinhole or window pane leaf damage; frass or droppings; ragged and torn leaves; and pupae in the soil. Focus on the newest two or three leaves emerging from the funnel, as this is where caterpillars like to feed and where moths lay eggs. For later maize growth stages, examine the newest three or four leaves emerging from the funnel, plus the emerging tassel.
3. Record the number of plants out of each batch of 10 with fresh window panes or infested funnels in FAMEWS. Use the FAMEWS mobile app to determine percentage of infestation and mean plot infestation. Separately determine the number of egg masses and caterpillars per plant (or plot) and the respective means. Zeros should be recorded for non-infested plants; excluding non-infested plants will overestimate pest densities.
4. Avoid scouting right after spraying pesticides. Re-entry intervals on pesticide labels should be followed in order to avoid exposure during monitoring.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Field Scouting
Check at least 10 plants in 5 different places of your field for FAW, AAW and borer
INFO
SCOUTING
TRAPS

## Procedure for using a pheromone trap

A pheromone trap attracts male insects. The Universal Bucket Trap is normally used. The traps and the lure can usually be obtained locally, or from your local extension office.

1. Place the trap on the edge of a maize field or in an open area nearby. Hang the trap on a pole or branch about 1–1.5 m from the ground where it will not be disturbed by animals or children. The trap should be hung straight and level so the lid will keep rain from getting in. Make sure leaves and tassels do not block the entrance to the trap. As the maize grows taller, move the trap higher so that the bottom of the trap is always about 30 cm above the plants.
2. Place the pheromone lure in the compartment in the basket on top of the trap. Unwrap the insecticidal strip (Vaportape) and place it in the trap to kill moths. Do not handle the insecticidal strip with bare hands – it is poisonous. Use gloves or some other tool.
3. Replace the strip every month and the lure every two months. Ten strips and five lures will be required for one trap for a single maize growing season. Do not store extra strips with food; place them in a sealed airtight jar and store in a cool, dark place. Store spare lures in airtight bags or an air-tight bottle and keep in a cool, dry and safe place. Store the lures in a freezer (if available). The Universal Bucket Trap will have instructions to guide installation but when in doubt consult your extension officer.




**Strips and lures**

## Servicing the pheromone trap and collecting data

1. Look inside the trap and count how many moths are there. Record the date and the number of moths using FAMEWS. Throw the moths away. Prepare the trap to be used again.



2. Replace the lure after two months of use, and record that the lure was changed. At the end of the growing season, stop monitoring and store the trap for use next season.