

HOW TO COMBAT THE FALL ARMY WORM

The fall armyworm (FAW) which was first detected in Uganda in 2016 and caused havoc last year is back.

Towards the end of last year the incidence of the pest was reducing but it has since sprung and farmers are left in dilemma on what to do next.

However there are number of both scientific and rudimentary practices for farmers to adhere to in a bid to control the pest infestation.

In an exclusive interview with seeds of gold, the Director National Agricultural Research Organisation (NARO) Dr Ambrose Agona explains some of the long and short term measures farmers can adopt in a bid to prevent the pest from infesting their fields.

How to control armyworms

Pheromone sex traps

- Farmers are expected to erect pheromone traps near fields to trap adult male moths.
- A pheromone is a chemical secreted by a female insect to attract males for mating and once the male insects are trapped in the bucket there is no more possibility of mating.
- It is important to place it in one month before planting the crop. Place the trap next to the maize field so that the scent of the pheromone is carried across the tops of the plants by the wind and they should be hanged on poles.
- Farmers are advised to replace the pheromone lure every four weeks for continuous trap process and trapped insects must be removed every week. “Pheromone traps are used to catch certain species of insects and for the case of the fall armyworm it is used to attract male worm species to the trap. Once attracted a sticky board or catching bucket captures the insect,” says Dr Ambrose Agona.

Predators and insects

- Farmers can use teleonus Remus wasps which eat up the eggs of the fall army worm preventing its growth into a fly for possible reproduction.
- Farmers are advised to avoid using harmful pesticides or practices that would inadvertently destroy beneficial insects.
- Use of parasitoids, predators and possibly viruses and bacteria both local and exotic is a commendable method in managing the fall army worm.
- Some bird species especially soldier birds are good at consuming the fall army worm therefore it is advisable for farmers not to scare away any bird seen in search of pests on their farms.
- Other beneficial insects, such as lacewing and minute pirate bugs feed on army worm eggs as well as the young larvae. They help control other harmful pests, including aphids, ear worms, cutworms, cabbage loopers and a variety of mite and insects.
- It is important for farmers to attract birds which are fond of eating moths thereby pulling the larvae off the plant.
- It is also important for farmers to leave tiny pests such as nematodes in the soil because they will feed on the larvae in the soil.

Application of pesticides

- Farmers are expected to spray the field with insecticide such as Garden Dust, Monterey Garden and Rocket commonly known by Ugandan farmers.
- Insect spray which is highly selective and biological pesticide containing *Bacillus thuringiensis* to control leaf-eating caterpillars and worms is important.
- Others applicable for cereal crops including maize are Asana XL, Permethrin, Carbaryl (Sevin) which can be applied either to Maize or wheat. Ethyl is useful for maize, sorghum and all small grains.

- Lorsban can be applied to maize and sorghum. Do not allow livestock to graze in the field for at least 15 days after you have applied lorsban because it can cause death of animals.
- The FAW in tropical climates completes its life cycle in 30-40 days and farmers are expected to avoid treating successive generations of the pest with the same active ingredient.
- Rotate active ingredient with products that have ingredients with different modes of action every 30 days. The pesticide label specifies how often and at what rate an insecticide should be applied per season

Push and pull method

It is important for farmers to use natural horticultural oil spray such as multipurpose neem oil spray at various stages of larvae growth. Scientists recommend intercropping maize with drought-resistant Greenleaf disodium and planting Brachiaria grass on the farm's edge to help curb fall armyworms. The leguminous Greenleaf desmodium becomes repellent, emitting a blend of compounds that help push armyworms away from maize while Brachiaria Mulato II grass around field edge produces chemicals attractive to the pests. Some of the natural predators exist in the country but there is an option of importing others from countries which are breeding them. Other methods include optimizing timing of crop planting and rotations to escape pest pressure. Such approaches work by creating good timing between the pest and critical crop growth stages.

“Efforts to control the armyworm through conventional methods, such as use of insecticides, are complicated by the fact that the adult stage of the worm is most active at night, and the infestation is only detected after the damage has been done,” said Icipe scientist Charles Midega.

Challenges

Scientists tasked with breeding of cereals contend that the pest is disastrous to all varieties of maize which have been released to farmers both hybrid and open pollinated varieties.

Farmers are advised to take up the option of applying pesticides as a last resort because it may cause damage to existing insects including bees which are useful to the environment. Some pesticides which are toxic end up affecting the health of farmers because they do not take preventive measures before applying the same.

Background

In publication titled Fall Army Worm: a guide for intergraded pest management in Africa authored by USAID and the International Maize and Wheat Improvement Center (CIMMYT) it is stated that the spread of FAW across Sub-Saharan Africa believed to be native to the Americas was first reported as present on the African continent in January 2016.

FAW destroys many different crops. It is capable of feeding on more than 80 different crop species making it one of the most damaging crop pests.

Besides maize, the worm also destroys crops such as sorghum, rice, sugarcane, cabbage, beet, groundnut, soybean, onion, cotton, pasture grasses; millet, tomato, potato and cotton among others are prone to it

The fall armyworm has both a migratory habit and a more localized dispersal habit. It can migrate more than 500 kilometers before positioning to settle in one place.

When the wind pattern is right, moths can move much larger distances of 1,600 kilometers per night.

Armyworm species

There are a number of species of armyworm caterpillars, many with a distinct taste for a particular plant or vegetable.

But some will eat anything green or red or yellow. They are most active at night and hide in plants and under garden debris during the day.

In their larval stage, army worms attack a variety of crops as well as grasses, sometime moving in masses to new areas in a way that brings to mind as its name suggests an army on the march.

The assault is mostly aerial, with the gray moths usually arriving under cover of darkness to lay eggs on leaves of basically cereal crops.