

## Fall Armyworm -An Emerging Pest On Maize Crop And Its Management

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### Introduction

Fall armyworm *Spodoptera frugiperda* (J. E. Smith) is a serious pest on maize crop. It was introduced to the African continent in late 2016 and spread to more than 44 African countries through migratory behavior (Goergen et al., 2016). *S. frugiperda* had entered the Indian subcontinent and was discovered infesting maize fields for the first time in Karnataka in the middle of 2018. (ICAR-Shylesha et al., 2018; Sharanabasappa et al., 2018). It was an important maize pest due to its voracious feeding behavior and ability to attack maize at all crop growth stages of development. According to recent studies, fall armyworm can cause maize yield losses ranging from 8.3 to 20.6 million tonnes per year in the absence of management practices (Day et al., 2017). The percentage of *S. frugiperda* infested maize fields ranged from 44% to 100% (Navik et al., 2021).



Fig 1: Fall armyworm damage on maize crop.

### Damage Symptoms:

Majorly fall armyworm feeds on tender leaf tissues and whorl, in addition to that it also damages the stem, tassel, and young corn. The damaged leaves unfurl, forming elongated uneven feeding zones or rows of holes. Moist sawdust-like frass was observed on the severely affected plants.

Management of Fall armyworm

### Monitoring:

- Installation of pheromone traps @ 5/acre to monitor the FAW population and it will be helpful for timely management practices.

#### Cultural Control

- Deep ploughing of soil before sowing of maize crop will reduce the FAW incidence.
- Timely and uniform sowing and avoid staggered sowing.
- Intercropping of maize with pulse crops. (For example, maize + pigeon pea/black gram/green gram).
- Erection of bird perches @ 10 /acre during the early stages of crop growth (up to 30 days).
- 3-4 rows of Napier grass should be planted around the maize crop as the crop attracts the FAW and application of 5% NSKE or azadirachtin 1500 ppm as soon as the trap crop exhibits FAW damage symptoms.
- Use of fertilizers in a balanced manner.

### Mechanical control:

- Collection and destruction of egg masses and early instar larvae.

- Whorl application of Sand + lime in 9:1 ratio in the whorls at 20-30 after sowing.

#### Biological control:

Augmentative release of egg parasitoids *Trichogramma pretiosum* Or *Telenomus remus* @ 50,000/ acre at weekly intervals.

#### Biopesticides:

- Application of *Metarhizium anisopliae* talc formulation @ 5g/litre or *Nomuraea rileyi* @ 3g/litre at 15-25 days after sowing in whorls of maize plants.

#### Botanicals:

- Application of 5% NSKE or Azadirachtin 1500 ppm @ 5ml/ litre of water will reduce the FAW incidence.

#### Poison baiting:

- Usage of Poison baiting technique for late instar larvae (10 kg rice bran + 2 kg jaggery+100g Thiodicarb) applied on the plant's whorls will reduce the infestation. (DPPQ&S, 2019).

#### Recommended insecticides as per CIB&RC, 2023

S. No	Pesticide	Formulation	Recommended dose (g (a.i. ha <sup>-1</sup>
1	Chlorantraniliprole + Lambda-cyhalothrin	9.3+4.6ZC	35
2	Cyantraniliprole + Thiamethoxam	19.8+19.8FS	2.38
3	Spinetoram	11.7w/w SC	30
4	Chlorantraniliprole	18.5SC	40
5	Emamectin benzoate	5SG	10
6	Emamectin benzoate + Lufenuron	5+40WG	36
7	Thiodicarb	75WP	750
8	Novaluron + Emamectin benzoate	5.25+0.9w/w SC	92.25
9	Isocycloseram	SC 18.1%	60

#### Conclusion

Fall armyworm is the most devastating pest of maize crop. It is regarded as a serious polyphagous pest and is voracious in nature. It may feed on about 100 different plant species, including rice, sorghum, sugarcane, cotton, cabbage, potato, tomato, and soybean. Therefore, attempts to manage this pest may be undertaken. Farmers are advised to implement timely plant protection measures. The focus is on early pest warning, damage awareness, evaluating their impact on maize yields, and determining appropriate fall armyworm control techniques.

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