Sensitization Workshop on Fall Armyworm (FAW) Management in Maize

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Organized by

ICAR Research Complex for NEH Region, Tripura Centre

In collaboration with

ICAR-Indian Institute of Maize Research, Ludhiana

ICAR RESEARCH COMPLEX FOR NEH REGION
Tripura Centre, Agartala, Lembucherra
Tripura (West) – 799210

Maize (*Zea mays* L) is one of the most versatile emerging crops having wider adaptability under varied agro-climatic conditions. Maize is known as queen of cereals because it has the highest genetic yield potential among the cereals. It is an important food grain as well as fodder crop grown in about 13,596 ha with a production of 18966 MT and productivity of 1395 kg/ha in Tripura. A new invasive pest, fall armyworm [FAW, *Spodoptera frugiperda* (J.E. Smith) (Lepidoptera, Noctuidae)] is a notorious insect of high dispersal ability, wide host range and high fecundity that make it one of the most severe economic pest. It is native to Central and South America but, recently swept across the world at accelerated speed. In India, FAW was initially observed at Shivamogga, Karnataka during early May-June 20l8 and rapidly spread across almost all the states.

Predominantly tropical climate of Tripura favors accelerated and year round multiplication of FAW and the insect could potentially be a major threat to maize cultivation due to its high pestiferous nature. Moreover, the pest have already invaded maize fields in many parts of the state and posing serious threat to Tripura agriculture. As per preliminary survey, damage due to FAW has been observed in about 30% maize fields.

A female moth lays over 1000 eggs in single or multiple clusters on the underside of the leaves, typically near the base of the plant and close to the junction of the leave and the stem and covers these with a protective hairy layer. The egg hatches in 4-6 days and the new born larvae disperse to feed on epidermal layers of lower surface of young maize leaves. The larvae passes through 6 stages called instars in 16-20 days and then undergo for pupation in soil. The Pupa of the pest is reddish brown in color and takes 7-11days to emerge into adult moth. Adult moth can survive 3-7 days. Hence, the insect completes its total life cycle in 30-44 days

FAW larvae appear in shades of green, olive with four black spots in each abdominal segment, broad pale band along top of body and contrasted by dark stripping at the sides. It could be easily identified from any other armyworm species by its tail end, where the black spots are bigger and arranged in square pattern on abdominal segment 8. The head has a predominant white, inverted Y-shaped suture between eyes. 1st and 2nd instar FAW larvae cause elongated papery windows on leaves by scrapping on surface. Once the larva enters 3rd instar, its feeding cause ragged-edged round to oblong holes on leaves. Fifth instar is feeding voraciously, loosing larger areas of leaves and sixth instar larva extensively defoliate the leaves and produce large amount of faecal matter. In reproductive stage of the maize crop, tassel and corn ears are the vulnerable parts.

Crop management practices along with systematic plant protection in an area wide manner can manage FAW population below economic threshold damaging levels. An integrated pest management (IPM) approach is to be followed for effective management of this pest.

OBJECTIVES

- Create awareness on FAW invasion in Tripura
- Exchange of experiences and lessons learnt from the recent invasion in India including NEH regions and providing technical advice
- Synthesizing the strategic framework for sustainable FAW management in Tripura

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Joint organizing Secretaries	Satyapriya Singh
	M.A. Ansari

Contact us:
Convener: basantkandpal@gmail.com, 9953371147 (m)
Organizing secretary: gulab.iari@gmail.com, 8413971329 (m)