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Brinjal Shoot and Fruit Borer (*Pyralidade; Lepidoptera*): An Emerging Agricultural Borers

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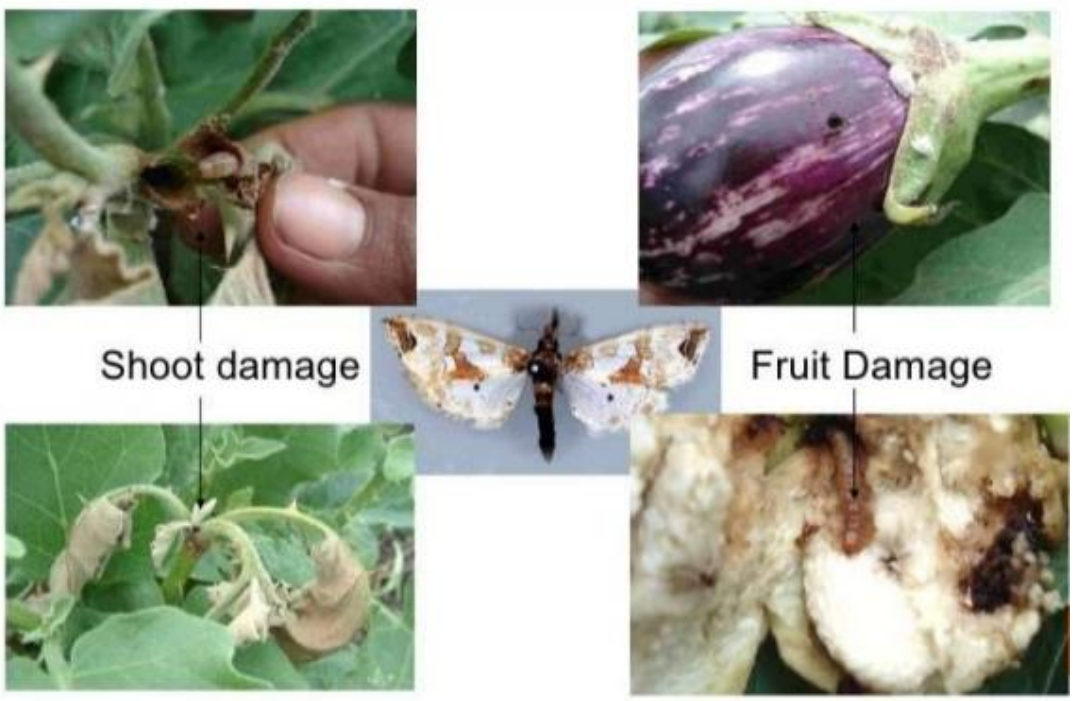
SUMMARY

Brinjal Shoot and fruit borer is the major damaging pest of brinjal which attacks at top shoots of young plant as well as fruits and also causing significant reduction in yield. Borers are found in whole world wide. Ecological and geographical differences are the cause of diversity in borers.

INTRODUCTION

Brinjal (*Solanum melongena* Linnaeus) also known as eggplant is referred as "King of vegetables". Egg plant is a native of Indo-Burma region, and well-known to be grown in India since ancient times. The major brinjal growing states in india are, Andhra Pradesh, karnatka, West Bengal, Tamil Nadu, Maharashtra, Orissa, Uttar Pradesh, Bihar and Rajasthan. However, the development of newer varieties and crop production technology have made possible to raise the crop all the year round. The brinjal shoot and fruit borer larvae were observed to feed on *Solanum nigrum* and *Solanum tuberosum*, all belonging to family Solanaceae. On *Lycopesicum esculentum* and *Solanum tuberosum* it was reported to cause damage similar to brinjal plant. Among these, the brinjal shoot and fruit borer is considered the main constraint as it damages the crop throughout the year. Life cycle complete egg, larva, pupa and adult are found. It is a monophghous pests feeds only on brinjal.



Morphology of Borer :

Damage is caused by caterpillar larva is internal feeder it immideately bore into the nearest shoot and fruit.

Behavior and Biology :

The female moth lays small white eggs and emerge in 4-5 days. After 15-20 days, larva is well develop, measuring 10-15 mm. It forms a sturdy cocoon around itself on or just below the soil surface, and rests as a pupa borers belongs to holometabolous sub division are having an incomplete metamorphosis in their life cycle defined by three stages of life cycle i.e. egg, larava, pupa and adult. Larval stage having several instars which are recognized by size of body and its parts Eggs deposited on glass rearing box was carefully removed with the help of fine camel hair brush. Incubation period of each egg was recorded. Larvae- Procedures was adopted for larvae rearing just after their hatching. In one petridish larvae of first instar was kept along with soft leaves and tender

buds and soft fruits of brinjal was provided for second, third, fourth and fifth instar larvae of Leucinodes orbonalis. From hatching of egg to initiation of pupation was taken as larval period. Pupa when the larvae pupate inside the petridish it was kept undisturbed for its cycle completion and when the adult emerged out from it then the adult was separated out. The period required from the pupation to the eclosion of adult stage was counted as the pupal period. Adult longevity the newly emerged moths were kept in glass rearing box and ten per cent sugar solution was provided as food. From eclosion of adult to the death period was counted as longevity of adult. Sex ratio based on the visual characters like variation in abdomen with projections in the female and the bigger size of the female than that of male, the insect was separated sex wise for sex ratio.

Borer and Ecology

The temperature and relative humidity played an important role while assessing the pest status and its natural enemies and for developing eco-friendly pest management approach against *L. orbonalis* There are several natural enemies (predators, parasitoids and entomopathogens) have been reported against EFSB in South and Southeast Asia by Waterhouse, (1998), and their role in keeping the EFSB population at levels below that causing economic injury is not significant.

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