

Chiku Moth / Leaf Webber

Nephoteryx eugraphella (Ragonot)
(Lepidoptera : Pyralidae)



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Sapota or *Chiku* [*Manilkara achras* (Mill.) Forberg] is an important sweet fruit crop of tropical region of India. The yield loss due to succession of about 33 insect pests at the different crop stages happened due to continuous and overlapping flowering and fruiting pattern under varying ecological situation (Bisane *et al.*, 2018). Among bud boring complex, chiku moth is a key pest of sapota occurring throughout India damage leaves, buds, flowers and fruits also.

Identification of Damage:

The caterpillar of chiku moth (Fig. 1) makes a bunch of leaves by silken thread and feeds inside by cutting the leaf (Fig. 2). It feeds on chlorophyll by scrapping and produce parchment. Thereafter, the caterpillars bore through the basal part of the bud and flower making bigger sized holes as compared to that of bud borer (Fig. 3). The larvae bore into the young buds and feed on ovary and inner parts of bud (Fig. 4), which wither and larvae move on to other buds and flower, thus damaging many of them. The infestation of this pest can be easily spotted by the presence of webbed shoots, the appearance of dark brown patches on leaves and clusters of dried leaves and buds (Fig. 5). The excreta on webbing of larvae with dried up leaves and buds clump can easily identified on damage parts and later attacked by ants. Larval feeding voraciously causes serious damage to young terminals and buds, which reduces flowering and ultimately fruiting also. It also causes damage to fruits by making holes and galleris on sapota endosperm (Fig. 6).



History:

It was first reported by Hampson (1896) on *Mimusops elengi* Linnaeus and later by Fletcher (1920) at Pusa, Bihar as well as by Misra (1920) on sapota.

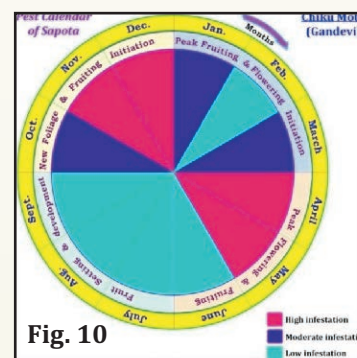
Life Cycle:

Eggs are flat, oval in shape and generally yellowish-white. It observed singly or in batches on the leaves or leaf-petioles and incubation period ranged from 3 to 5 days. The larvae has four instars with pale-yellowish colour of early instars, which turn pinkish-brown or pale-ash colour or greenish-yellow during late instars (Fig. 7). The third and fourth instars are very active and the larval stage completes within 13-18 days. The newly formed pupae were light green colour and changed to dark reddish brown later. The pupal stage lives for 5-9 days in webbed case (Fig. 8) or in soil. The longevity of male and female noted between 5-7 and 7-9 days, respectively (Fig. 9). The total life span lasted for 4-6 weeks varies with ecological condition.



Peak Activity Period:

The infestation is reported round the year with peak infestation phase noticed during May-June at peak flowering period and November-December at new foliage flush and fruiting stage (Fig. 10). In Gujarat and Maharashtra, this pest mainly infests bud as compared to leaves, while in southern part of India, it mainly damages leaves with buds also. The bud damage was minimum in varieties like PKM-2, DHS-2 Mohangoottee, Singapore, Zumakhiya, and Chala collection 2 and the maximum bud infestation was observed on Kalipatti, CO-1, CO-2, DHS-1, Kirthibarthi, Murabba and Paria collection (Bisane, 2021).



Management:

- Conservation of hymenopteran parasitoids like *Eurytoma* sp., *Xanthopimpla* sp., *Macrocentrus* sp. and *Brachymeria nosatioi* Habn. as well as predators like coccinellids, chrysopids, predatory wasps, mantids, etc.
- Collection and removal of fresh infested web leaves and buds clusters/clumps along with larvae from twigs.
- Collect and remove the dried clusters of leaf web.
- Prune the crowded and crossing branches of tree.
- Install erect light trap to monitor the pest activity in orchard.
- Sequential application of neemazol/nimbecidine @ 3 ml/lit; lamda-cyhalothrin @ 1 ml/lit and ready-mix prefenophos + cypermethrin @ 1 ml/lit at 20 days interval during peak flowering (October and March onwards).

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