

BUD BORER

***Anarsia achrasella* Bradley
(Lepidoptera : Gelechiidae)**



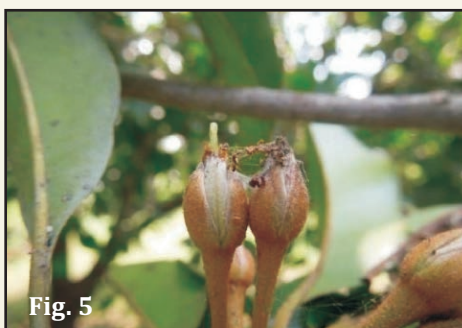
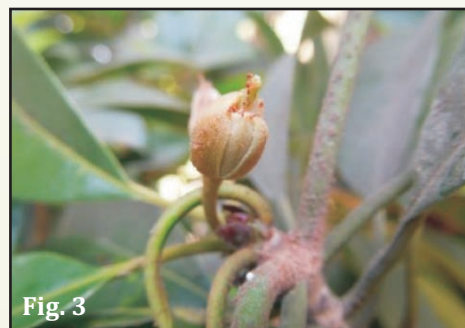
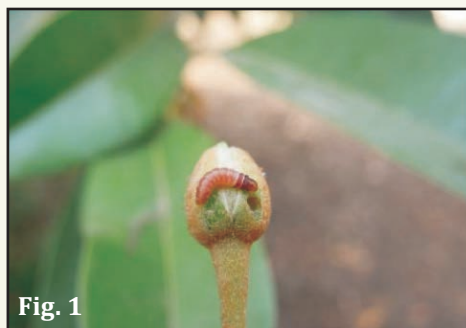
**K. D. Bisane, B. M. Naik,
P. K. Modi and A. P. Patel**



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, bud borer (bud worm) is a prime pest damages up to 20 to 30 % of buds and flowers and considered to be key factor affecting the yield potential in all sapota growing regions of India.

Identification of Damage:

The caterpillar of bud borer is of reddish colour distinguished by whitish band on its head (Fig. 1). The larva bores through the upper tapering part of the bud and flower and eats up inner content of ovary and petals leading to no flower setting or retention. The larvae remain inside the unopened bud and nourish (Fig. 2). The caterpillar moves from one bud to another and caused injury to 5-7 flowers and the infested bud show milky appearance and presence of larval excreta on top (Fig. 3 and 4). Sometimes, the 2-3 affected flower buds webbed together also along with occurrence of larval excreta on top (Fig. 5). Furthermore, the affected buds and flowers dry up and later dropped down in considerable numbers caused yield loss. The early larval instar also cuts the margin and leaf lamina of the newly emerged leaves (Fig. 6).



History:

Ravoof (1964) firstly reported the occurrence of *Anarsia* sp. in India from Tamil Nadu. While, Patel *et al.* (1964) recorded existence of bud borer (*Anarsia* sp.) in central Gujarat and later Shah *et al.* (1986) reported damage of bud borer (*Anarsia achrasella*) on sapota in South Gujarat. Meanwhile, Sandhu and Sran (1980) noted existence of this pest on sapota in Punjab. Recently two decade back, this pest was recorded on sapota from Karnataka (Parvathi and Belawadi, 1994).

Life Cycle:

Eggs are oval shaped, white and laid singly along the midrib on the ventral side of leaves petioles or buds. The eggs hatched within 3 to 5 days. The newly hatched larvae are light yellow, shiny with black head and later instars turn reddish brown (Fig. 7). Larvae passes through 4 instars complete the phase between 11-14 days. The larvae pupate within or outside the floral webbings. The fresh pupae of brick-red in colour and turn dark brown (Fig. 8) at later period with the duration of about 6-9 days. The fore wings of adults are dark ashy-gray coloured and hind wings fringed with yellowish shade (Fig. 9). The longevity of male and female ranged between 3-5 and 4-6 days, respectively. The total life cycle lasted for 4-5 weeks depends on ecological variations.



Peak Activity Period:

Generally, the incidence of this pest observed throughout the year, however its peak activity period noted between April to June (Fig. 10). The pest causes as high as 20 to 30% bud failure during April to May resulting in heavy quantitative loss of the produce during fruiting season. The lower bud infestation reported on varieties like PKM-1, PKM-2, Mohangoottee, Zumakhiya, Pilipatti and Chala collection 1, while higher incidence observed on Kalipatti, CO-1, PKM-5, DHS-1 and Paria Collection (Bisane, 2020).

Management:

- Conservation of parasitoids like *Apanteles hyposidrae* Wilkinson and *Phanerotoma* sp. nr. *hendecasisella* Cameron and *Goniozus* sp.
- Removal and destruction of all the infested clumps along with the larva.
- Install light trap to monitor the pest activity in orchard.
- Installation of black *Tulsi* (*Ocimum sanctum*) leaves extract baited trap @ 2/ha at initiation of the flower bud during March to June. The trap can be prepared from 500 gm leaves in 1 lit water, grind and filter and add 2 ml dichlorvos.
- Sequential application of neemazol/nimbecidine @ 3 ml/lit; lamda-cyhalothrin @ 1 ml/lit; and ready-mix preferophos + cypermethrin @ 1 ml/lit at 20 days interval during peak flowering (March onwards).

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