First record of fruit sucking moth on Bt cotton (*Gossypium hirsutum* L.) in Gujarat

T. M. Bharpoda, M. B. Zala, R. K. Thumar and P. K. Borad

Department of Entomology, B. A. College of Agriculture, Anand Agricultural University, Anand - 388 110, India

E-mail: tmbharpoda@yahoo.com

*Bt* cotton, *Gossypium hirsutum* L., is one of the important commercial crops of Gujarat. Among the insect pests infesting *Bt* cotton, sap feeders viz., leaf hopper, *Amrasca biguttula biguttula* Ishida; aphid, *Aphis gossypii* Glover; whitefly, *Bemisia tabaci* (Gennadius); mite, *Tetranychus cinnabarinus* Boisduval and thrips, *Thrips tabaci* (Lindeman) are major and reported earlier.

During 2013-14, fruit sucking moth (Lepidoptera: Noctuidae) appeared on cotton bolls in farmer’s fields of Sabarkantha and Kheda districts of Gujarat. *Otheris materna* Linnaeus, *Otheris fullonia* Clerk, *Otheris homaena* Hubner and *Achaea janata* Linnaeus were the cosmopolitan species of fruit piercers in India (Mohite et al., 2004). The fruit sucking moths, *Eudocima materna* Linnaeus and *Eudocima homaena* Hubner were found feeding on cotton bolls for the first time.

Fruit sucking moths belongs to the order Lepidoptera; family Noctuidae and sub-families Ophiderinae (Primary piercers) and Catocalinae (Secondary piercers). They cause severe damage to fruits and vegetables by piercing and sucking the sap. The tip of the proboscis of primary piercers is armed with chitinised teeth capable of drilling a hole through the skin of the fruit. Other species of moths (secondary piercers) use the hole made by the primary piercers and suck the juice (Magar, 2012).

The female of *E. materna* laid shiny white, 0.98 mm long, dome shaped eggs on wild host plants. The larva remains elsewhere in wild host plants and feed on certain wild plants belonging to the family menispermaceae. The larva is brightly coloured with orange, yellow and blue spots on the body. The larval stage passed through five instars. The pupa was brown to black and cylindrical in shape. The adult of *E. materna* was fairly large and entire body was covered with orange coloured scales and hind wings were surrounded with black border and there was a black spot just below the centre of hind wing in both the sexes. There were three black triangles on the forewings of female moth, whereas only two faint triangles were found on the forewings of male moth. The trochanter, femur and tibia of the forelegs of male
were covered with densely packed long hairs while in case of female, the hairs were short and poorly developed. The male and female measured on an average 29.84 ± 0.94 and 30.36 ± 1.47 mm in length and 76.07 ± 1.82 and 76.54 ± 1.46 mm in breadth with expanded wings, respectively. The egg, larval, pupal and adult period of *E. materna* was completed in 2.35 ± 0.59, 13.25 ± 1.25, 12.85 ± 1.09 and 28.8 ± 3.85, respectively. The total life period occupied 58.00 ± 3.97 days (Patel and Patel, 2006).

![Eudocima materna Linnaeus](image1.png)  ![Eudocima homaena Hubner](image2.png)

The male of *E. homaena* has a fulvous brown head and thorax; the collar, metathoracic tufts and tibiae with an orange tinge; head and collar with a purple bloom; abdomen orange. Fore wings are olive-green suffused with purplish red-brown and striated with rufous; dark subbasal and antemedial lines and slightly curved postmedial line; traces of some waved medial lines; an indistinct reniform stigma and dentate submarginal line. Hind wings are orange with large black lunule beyond lower angle of cell; a submarginal band with waved edges from costa to vein; underside of fore wings are orange with the postmedial band. The female of *E. homaena* possesses forewings much darker with deep purple and chocolate tones; a broad verditer green fascia below the cell sending bars to inner margin near base and outer angle and conjoined to the green reniform spot. Hind wings are similar as in male.

The adult moth sucks the juice from the cotton bolls by inserting proboscis (Fig. 1b). As a result, the area around the puncture becomes soft. On feeding site, fungal and bacterial infection takes place. Ultimately, the puncture becomes pale and soon the boll turn brown (Fig 1a) and fall down. The pest causes direct loss to harvestable produce.
This is claimed to be the first record of fruit sucking moth on Bt cotton from middle Gujarat. Authors are thankful to Dr. Shashank, Taxonomist and Dr. Debjam Dey, In-charge Insect Identification Service Division of Entomology, IARI, New Delhi – 110 012 for indentifying the pest.

References

