

Biology Of Fruit Sucking Moth, *Othreis Materna* L. On Sweet Orange

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ABSTRACT

The study on biology of *O. materna* was carried out in the laboratory of Department of Entomology, Sardarkrushinagar at room temperature. The eggs were yellowish white and spherical in shape. The average diameter of egg was 0.98 ± 0.03 mm. The average incubation period was 2.35 ± 0.59 days and hatching percentage was 89.00 ± 11.00 . The larval stage passed through five instars. The average length and breadth of first, second, third, fourth and fifth larval instars were 4.32 ± 0.42 and 0.86 ± 0.05 mm, 11.81 ± 0.44 and 1.26 ± 0.15 mm, 18.8 ± 1.28 and 2.58 ± 0.33 mm, 35.01 ± 2.41 and 4.15 ± 0.15 mm and 65.33 ± 0.51 and 8.83 ± 0.14 mm, respectively. The average development period of first, second, third, fourth and fifth larval instars were 2.10 ± 0.31 , 1.35 ± 0.49 , 2.50 ± 0.51 , 3.55 ± 0.51 and 3.85 ± 0.37 days, respectively. Total larval period was 13.25 ± 1.25 days. The pupa was brown to black and cylindrical in shape. The average length and breadth of pupa was 25.04 ± 1.11 mm and 8.99 ± 0.59 mm, respectively in case of male. While, it was 26.16 ± 1.72 mm and 9.45 ± 0.53 mm in female, respectively. Pupal period was 12.85 ± 1.09 days. The adult 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 foreleg of male were covered with densely packed long hair while in case of female, the hair 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 average longevity of male and female was 28.8 ± 3.85 and 31.1 ± 1.66 days, respectively. The sex ratio of male : female was 1:1.95. The total life period occupied 58.00 ± 3.97 days for male and 59.00 ± 3.16 days for female.

Key words : Fruit sucking moth, Citrus, Biology, *Othreis materna* L.

INTRODUCTION

India is the sixth largest citrus (mandarin, sweet orange and acid lime) producer contributing 4.8 per cent of the total world's production (Singh and Naqvi, 2001). But, it has no place in the world trade because of a number of reasons including quality of fruits. Insect pest attack affects the quality and quantity of fruits and requires to be tackled. Fruit sucking moth is one of the common and perhaps the most serious and destructive pest of citrus. In India, it was first reported as a serious pest by Lefroy (1909). Fruit sucking moth particularly *Othreis Spp.* is an important pest of citrus and other fruit crops in tropical and sub-tropical countries. It belongs to the family Noctuidae and order Lepidoptera. They feed on mature and ripening fruits by piercing the rind by means of specially adapted proboscis and suck up the juice of the fruits. Looking to the apparent importance of the pest, no much information is available pertaining to biology of this pest in Gujarat state particular. Keeping this in view, the present investigation on the biology of fruit sucking moth, *Othreis materna* L. was carried out on sweet orange.

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MATERIALS AND METHODS

The studies on biology of *O. materna* using sweet orange or *mosambi* (*Citrus sinensis* Osbeck) cv. *Pavlichhap* as a host was carried out in the laboratory of Department of Agricultural Entomology, Chimanbhai Patel College of Agriculture, Sardarkrushinagar Dantiwada Agricultural University, Sardarkrushinagar, during August to October, 2003. Minimum and maximum temperature and relative humidity were recorded during the course of study.

The adults of fruit sucking moth are nocturnal in habit so, they were collected during 8.00 to 11.00 p.m. with the help of torches and insect collecting nets from sweet orange orchard of Fruit Research Station, Dehgam, District : Gandhinagar and Horticultural Instructional Farm of C.P.College of Agriculture, Sardarkrushinagar. The moths collected in the insect collecting nets were brought to the laboratory, paired and immediately transferred in iron wire cage (Length 50 cm, Breadth 50 cm, Height 70 cm) covered with black cloth. To provide food to adult moth, fruits of sweet orange were hanged inside the cage.