Research Paper :

Biology of Diamond back moth, *Plutella xylostella* Linn.

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SUMMARY

The pre-oviposition, oviposition, post-oviposition periods and fecundity of *Plutella xylostella* were found 2 to 4, 6 to 7, 5 to 7 days and 152 to 221, respectively. The larvae passed through four instars. The incubation, larval and pupal periods were 3 to 4, 7 to 11 and 3 to 5 days, respectively. The pupation took place on the glass jars, muslin cloth and undersurfaces of the leaves of the plants. The longevity of male moth was 5 to 7 days while female lived for 12 to 16 days. The mean time taken from egg to adult stage was 14 to 22 days.

Key words : *Plutella xylostella*, Biology, Diamond back moth

Diamond back moth, *Plutella xylostella* Linn. is the most noxious pest of cabbage crop which occurs almost all over the world and causes severe damage to the crop. The pest was first recorded from South America in 1890 and then from Venezuala in 1939 (Saravaiya and Patel, 2005). The larvae mine the cabbage leaves on their undersurfaces in the earlier stages while in the later stages they feed on leaves. The larvae feed on the leaves to the extent of 62 to 78 per cent, causing irregular patches on the leaves (Harcourt, 1957). All the leaf tissues are consumed by the larvae except the veins. The last stage larvae are voracious feeders which cause more injury than the first three larval instars creating a 'windows' to the leaves. Thus, the larvae skeletonise the plants and growth of plants remains stunted in cases of severe attack. The pest causes the damage right from seedling stage to till harvest. As a result there is a reduction in quality and yield of the produce. Abraham and Padmanaban (1968) reported 31 per cent yield loss to cabbage crop due to *P. xylostella* attack while Krishnakumar *et al*. (1986) estimated 52 per cent losses in the marketable yield due to the attack of this pest.

MATERIALS AND METHODS

Laboratory studies on biology of diamond back moth, *P. xylestella* Linn. were undertaken in the insectary of the Department of Agricultural Entomology, College of Agriculture, Dapoli at room temperature and relative humidity during *Rabi* season of 2005. The initial culture of the pest was obtained by collecting the infested cabbage leaves. The larval stages of the pest were reared in the laboratory in 41 cm high and 30 cm diameter cylindrical glass jars. The tops of which were covered with muslin cloth, secured firmly with rubber bands. The adults obtained from this rearing were used for maintaining mass culture of the pest. Thus, the mass culture of the pest was maintained in the laboratory and the various aspects of biology such as pre-oviposition period, oviposition period, post-oviposition period, fecundity, larval instars, pre-pupal period, pupal period and adult longevity were studied by using this culture.

RESULTS AND DISCUSSION

The pre-oviposition, oviposition, post-oviposition period and fecundity were found 2 to 4, 6 to 7, 5-7 days and 152-221, respectively (Table 1). The present findings were in confirmity with those of Kandaria *et al*. (1994) who reported that the pre-oviposition and oviposition periods lasted for 0.7 to 3.5 days and 2.4 to 21.4 days, respectively. The present investigation also confirmed those by Sharma *et al*. (1999) who reported that the pre-oviposition and oviposition periods and fecundity were 3.17 $\pm$ 0.199, 6.42 $\pm$ 0.142 days and 72-

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