Research Paper :

Biology of hawk moth, *Agrius convolvuli* L. on green gram

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SUMMARY

Biology of hawk moth, *Agrius convolvuli* L. was studied on green gram under laboratory conditions at the University of Agricultural Sciences, Dharwad, Karnataka, during *Kharif* 2009. The adult moth laid small bright bluish coloured eggs individually on all parts of the plant. The incubation period was 7.65±1.78 days. The larval stage passed through five instars and the total larval period was 24.85±2.33 days. The pre-pupal and pupal periods occupied 2.9±0.73 and 14.45±2.71 days, respectively. Average fecundity was 138.8±8.09 eggs/female. Total life cycle was completed in 49.85±7.55 days. The longevity of the female and male moths was 14.3±0.94 and 11.3±0.82 days, respectively.

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Green gram is one of the thirteen food legumes grown in India after chickpea and pigeonpea. In India the total production of green gram is 1.24 metric tonnes from an area of 3.30 million ha with productivity of 425 kg per ha (Anonymous, 2009). Among all pulse crops, green gram is frequently grown as short duration crop in *Kharif* followed by *Rabi* crops like jowar, wheat, chickpea and safflower. It is quite versatile crop grown on residual soil moisture or as a latch crop. It is drought resistant and suitable for dry land farming and intercropped with cereals, oilseeds, sugarcane or cotton.

The low yield of green gram in our country may be attributed to wide variety of factors, among which the ravage of insect pest is a paramount factor. Among different pests, *A. convolvuli* has gained major pest status on green gram and other pulses in recent years. The pest is causing enormous economical damage to the crop in the area. It attacks crop at 35 to 40 days (vegetative stage) after planting till pod formation stage. It has been reported to defoliate green gram completely (Ayyer, 1937), cause damage up to 50 per cent in potato (Faure, 1914). Keeping this in view, the present studies were carried out on biology of this pest.

MATERIALS AND METHODS

The larvae were collected and reared on green gram for the maintenance of pure culture in the laboratory. Freshly cut green gram plants were placed in a bottle containing water to maintain the turgidity of the plant and provided daily for egg laying. Cotton leaf dipped in 10 per cent honey solution was provided as food for the moths. The male and female moths after eclosion were allowed to mate and oviposit on green gram leaves. Fecundity was studied by enclosing ten pairs of adult moths individually in the cage with food. The observations on pre-oviposition, oviposition and mating period were recorded. Freshly laid eggs were kept on green gram leaf in Petriplates provided with wet blotting paper at the bottom to protect the eggs from desiccation. The larvae that hatched from