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### BIOLOGY OF MULBERRY LEAF ROLLER *GLYPHODES PYLOALIS* WIK. (LEPIDOPTERA: PYRALIDAE)

The I and II stage larvae of mulberry leafroller *Glyphodes pyloalis* Wik. were observed to scrap the mulberry foliage leaving behind the membranous layer as residue. Its III, IV and V instars were found to bind the leaves together by web formation and skeletonize the foliage consuming the large leaf areas. In order to save the *Morus* spp. from damage by defoliation, it is required to study the economic importance. Hence, studies were undertaken on its nature of damage and biology. The infested leaves from mulberry growing areas were collected and brought to the laboratory of Division of Sericulture, Mirgund. The larval forms were sorted out and separated from the leaves and provided with fresh leaves daily.

The nature of damage and symptoms of attack to the *Morus* spp. by *Glyphodes pyloalis* W. is in conformity with the work done by Sangeeta *et al.* (2005) on apple. Eggs are yellowish, dorso-ventrally flattened and female moth was found to lay eggs on the under surface of the leaves in the depressions along the midrib between the veins. (Fig.1). The eggs laid by single moth ranges from 250 - 300 in masses, when the female moth gets disturbed while depositing eggs, the scattering of the eggs was found with eggs indiscriminately laid on the muslin cloth covering the rearing jar or on the sides of rearing glass jar. Usually the egg laying occurs during the night or evening. The colour of the egg get changed from green to deep green with yellowish to green tinge,



Fig. 1. Eggs on leaf

The incubation period ranges from 5-7 days, when the black scar like structure gets developed. 90 -95% hatchability was observed under field conditions.

The neonate larvae hatching from egg is pale yellow, measuring 0.5 mm and 0.7 mm in length and breadth, respectively. The neonate larva takes 2-3 days to moult to II instar

The II instar measures 0.2 - 2.5 mm and 0.07 mm in length and breadth, respectively, eruciform devoid of hairs and soft bodied, light green with a black scar on either side of each body segment laterally; and inter segmental grooves vividly observed. It takes 2-3 days to moult into III instar. This instar also scraps off the green material and full grown larva measures about 2 cms. III and IV instars measure about 1.2 mm and 1.5 mm respectively. IV and V instars are voracious leaf feeders causing 25- 30% defoliation. III instar inflicts small pin-hole like injury and construct the silken web, binding the 3-5 leaves together and feed on the foliage without any disturbance. IV and V instars feed voraciously on the foliage rolling 3-4 leaves by silken web. Duration of instars range from 3.6, 3.6, 3.8, 4.0, 4.5 days respectively.



Fig. 2. Larva



Fig. 3. Pupa



Fig. 4. Adult

The mature larva measures about 2 cm, contracts to half its size and stops feeding (Fig. 2). The pre pupal stage lasts for 2-3 days; colour change into leathery brown from light yellowish brown; pupa of female bigger as compared to male; and pupal stage lasts from 8-11 days and measures about 1 cm (Fig. 3).

Adults are beautiful golden yellow with a tuft of hairs at the caudal end, with males smaller than females; fore wings golden yellow with brownish striations, which gives a triangular shape while at rest (Fig. 4). Each female lays about 250-300 eggs on the under surface of leaves, especially on the most preferred varieties *viz.* Goshoerami, Ichinose, Karyorosa, Mukey, Obawase and Kaksu KNG. The female lives for 11-15 days while the male survives from 8-10 days.

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