

STUDIES ON THE BIOLOGY OF MOONG WEEVIL *CYRTOZEMIA COGNATA* MARSHALL (UNDER ARID CONDITIONS)

Among all defoliators, *Cyrtozemia cognata* is one of the most serious pests found feeding voraciously on moong (*Vigna radiata* L.) at the C. R. farm, Jodhpur. In spite of its wide spread occurrence, the biology of this pest has not been worked out so far. This communication describes the biology of this insect studied during Kharif, 1975.

To study the detailed life cycle of this insect, two moong plants, about 45 days old, were covered separately with round polythene cages 60 cm high and 30 cm dia. in the field. The upper portion of the cages was covered with muslin cloth while the bottom 5 cm portion was buried in the soil. After placing the cages on the plants four male and four female adult weevils were released in each cage during the early hours of the day. Thereafter, the mating and other activities of the life cycle were recorded.

The adult weevils were found nibbling the leaves and making round and irregular holes, affecting the normal functions of foliage. The maximum number of the weevils were seen during morning and evening hours of the day indicating there by that the pest avoided bright sunlight, by hiding in the clods and around debris. The weevils were found feeding voraciously on ber (*Zizyphus* spp.), been (*Dolichos lablab*) 'Urd' (*Phaseolus mungo*), lucern and other grasses. Among all hosts, moong and guar were the most preferred. From the weekly observations it was clear that the peak period of activity of adult weevils was 2nd week of August in the field when the maximum damage was noticed.

The male and female mated continuously for 3-4 hours. The females laid eggs singly or in the batches of 2-36 generally during the night hours on the upper tip of the leaf. The margins of leaves were folded to provide the protection for their further development. The freshly laid eggs were small round, soft and shiny yellowish in colour. The incubation period observed was 2-3 days under field conditions.

The newly hatched grubs were 0.5 to 1.0 mm long and were observed moving into the soil just after hatching. The same behaviour was also observed when the leaves containing eggs were kept in the petri dishes, the larvae after hatching crawled down to the bottom of the petri dishes. The larval period lasted for 10-15 days with 4 instars. The

full grown grub was 6-7 mm long and 2.3 - 2.4 mm wide, creamy white in colour, slightly curved and somewhat tapering posteriorly. Full grown grubs were found to pupate at a depth of 5-6 cm in the soil. The length of the pupa varied 4-6 mm having shiny white colour. The pupal period lasted 4-5 days.

The newly formed adults were about 7 mm long and 4 mm broad, grey coloured body with black eyes and snout. This body turns into black colour in 4-5 hours time. The eggs were the first to turn black. The insect was found to hibernate throughout the winter and hot summers in the adult form.

The whole life cycle was completed in 20-25 days, with 3-4 generations from July to October. The longevity of the pest recorded was 15-20 days. The full grown male adult was smaller and dark black in colour as compared to female which was larger and brownish in colour. The ratio of male to female recorded in the field was 60 : 40 respectively.

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