

TOXORHYNCHITES RUTILES ARE EFFECTIVE FOR THE BIOLOGICAL CONTROL OF MOSQUITO LARVAE

S. Sainudeen Sahib*

* PG & Research Dept. of Zoology, S. N. College, Kollam-691001, Kerala, INDIA. E-mail: sainudeenpattazhy@hotmail.com

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ABSTRACT: The larvae of elephant mosquitoes, belonging to the species *Toxorhynchites rutilus* and the Culicidae family, have been found effective for the biological control of larvae of the other mosquitoes. Elephant mosquito larvae are large, voracious feeder and they feed on the larvae of the other mosquitoes. In the laboratory, the larvae thrived well in a Ph range of 5 to 6 and 4 to 5 mg/l dissolved oxygen.

KEY WORDS: Elephant mosquitoes, Biological control, Voracious feeder.

Elephant mosquitoes generally live in forests and sacred groves. Their larvae are found in tree holes and artificial containers. The adult mosquitoes thrive on plant juices and nectar. They never take blood meals. The adults are very large, voracious feeder and they feed on the larvae of the other mosquitoes. There are eight to nine black spots on the upper surface of the body and the feeding brushes at the head region are very large (Figs. 1, 2).

MATERIALS AND METHODS

Live larvae of elephant mosquitoes were collected from water in tree holes and artificial containers in the Kollam district of Kerala State. The larvae were transferred to white polythene rearing pans filled with dechlorinated water. About 25 larvae were put in each pan and were acclimated to laboratory conditions for three days. The food in the form of dry powder was given. Food consisted of a mixture of brewer's yeast and dog biscuits, finely powdered. After three days fifty other Dipteran larvae were introduced in to each pan containing elephant mosquito larvae. The tests were made at room temperature (27-28°C).

Some salient characteristics of the water were Ph 4 to 5; dissolved oxygen 4 to 5 mg/l; alkalinity-nil; total hardness 210 mg/l. Dead larvae were always removed immediately from the experimental pans. Water quality parameters were analysed by the methods followed by Golterman & Clymo (1969) and APHA (1976).

DISCUSSION

The results indicate that all other Dipteran larvae were not seen within 30 hrs. But elephant mosquito larvae retained in all experimental pans. The same results was obtained in all further experiments. The larval period of elephant mosquito was 10 to 12 days at 28°C. After the larvae completed their development they pupate in the rearing pans. The pupal period lasts 2 to 3 days. I used X^2 to compare the survival of elephant mosquito larvae at different Ph values. The results indicate that all elephant mosquito larvae thrived well in a Ph range of 4 to 5 ($X^2 = 10.30$, $P < 0.01$). Similarly, all elephant mosquito larvae dies in a Ph above 7 ($X^2 = 23.70 < 0.001$).

The present study indicate that the deposit of either larvae or eggs of the elephant mosquito in water bodies could destroy the larvae of the other mosquitoes. The eggs or larvae could be distributed to other aquatic ecosystems by ' seeding ' the area. The larvae hatch and feed on the other larvae and the process can be continued year after year.

LITERATURE CITED

APHA. 1976. Standard methods for the examination of water and waste water. American Health Association, Washington.

Golterman, H. L. & Clymo, R. S. 1969. Methods for chemical analysis of freshwater, Black well Scientific publication, Oxford.

Garrett, C. B. D. 1921. Notes on Helomyzidae and description of new species (Diptera). Insector Inscitiae Menstrus, 9: 19-32.

Garter, B. A. R. 1933. Notes on Malayan mosquitoes, IV, Anopheline larvae of the umbros group. Malayan Med. J., 8: 180-189.

Giles, G. M. A. 1900. A hand book of the mosquitoes giving the anatomy and life history of the Culicidae. BaleSons and Danielsson, London.

Giles, G. M. 1904. Notes on some collection of mosquitoes. J. Trop. Med., 1: 365-369.

Gressitt, J. L. 1967. Introduction. Entomology of Antartica. Antarct. Res. Ser., 10: 1-33.



Figure 1. Elephant mosquito.



Figure 2. Larva of Elephant mosquito.