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● RESEARCH ARTICLE ●

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Aqatic plant and planktons as bioagent for mosquito control

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ABSTRACT

The present paper report is based on the survey of planktonic genera from a breeding ground of mosquito at Vidisha M. P. It was noticed that planktons population have a direct bearing on the proliferation of aquatic stages of mosquitoes. Some phytoplanktons as well as zooplanktons provided a good source of larval food material but blue green algae and algal bloom were quite detrimental to the mosquito larvae.

Key words : Planktons, Bioagent, Aquatic stages, Copepodes, Rotifers, Cladocerans

INTRODUCTION

India is facing resurgence of malaria because of the resistance developed in vectors. Mosquito nuisances and mosquito-born diseases are increasing day by day. The use of chemical insecticides not only developed resistance in the insect vectors but they do cause great hazards to human health .The use of chemical insecticides is now no more a concrete solution to suppress vector population. General disillusionment with chemical control method has led to the resurrection of biological control from the pre-DDT era and to it becoming prematurely regarded by some as the solution to control vector problem (Service,1981). Progress in biological control of vectors has been very slow but the situation has improved during the past 10 year (Burger *et al.*,1981).

Ideally the objectives of biological control are not to eradicate at low densities through the coexistence of natural enemies. But this is much easier to said than to done partly because it is very difficult to understand the population dynamics of mosquito habitats, with chemical control there is no necessity. There are so many complexities regarding biological control agents, for example, the role of Copepods such as cyclops in mosquito control is quite complex matter because Cyclops can prey on mosquito eggs and larvae and are intermediate host of *coelmomyces*. They appear to be beneficial but unfortunately they are predator of one very important another bioagent *R. culicivorax* .This emphasizes the need for ecological and theoretical studies before rushing into biological control programs.

MATERIALS AND METHODS

Monthly fluctuation in zooplankton:

This Includes protozoans, rotifers, copepods and cladocerans, as indicated in Table 1. Regarding protozoans, maximum number were seen in march 2009 and lesser members were seen in September, 2008. However, the total number of genera were two in almost all the months. The maximum and minimum number of Rotifers, were 396 and 185 during the months of July and September, 2008, respectively. The maximum number of genera were 7 continusly in the months of January, February and March, among Copepods, maximum number were 261 during February in 2001. Whereas the minimum number were found during May, 2009. The number of genera of Copepods were 3, regarding Cladocerans population, the maximum population density of 303 was observed in November and minimum 106 in September of the same year. The total genera observed were 4 as indicated in Table 1.

Table 2 shows the distribution of Zooplanktons in the same breeding ground during the next year period *i.e.* 2009-2010. Maximum number of protozoans were seen in the month February (135 org./litre) whereas the minimum 56 in December, 2009. The number of genera remained constant to 2 only. Among rotifers, maximum number of 411 org ./litre was observeb in July and minimum 181 in October. The number of genera were between 5-7,

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