A PILOT STUDY OF IDENTIFY THE NATIVE FRESH WATER COPEPOD AS BIOLOGICAL CONROL AGENTS FOR MOSQUITO CONTROL

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Dr. Josekumar V S*

Mosquito-borne diseases have been a major problem in almost all tropical and subtropical countries. Currently there are no successful prevention of most of these diseases. various methods to combat threats from mosquito-borne diseases have been tried for many years. Many synthetic insecticides are used for controlling adult and larval mosquito populations. However, the harmful effects of chemicals on non target populations and the development of resistance to these chemicals in mosquitoes have been a major concern for this pest control. This prompted us to explore simple, alternative and sustainable methods of mosquito control. The eradication of mosquito using adulticides is not a prudent strategy, as the adult stage can easily escape remedial measures. Hence an attempt to target the breeding level for mosquito is made as an alternative for controlling this insect pest. A predator strategy to control larval stages of mosquito is a general approach behind the introduction of larvivorous agents. Many shallow water bodies cannot support this approach since it is not a suitable habitat to support larvivorous agents. In this context a microscopic organism, zooplankton , common in fresh water bodies are identified for mosquito larval control. The present experiment is an attempt to identify these agents form fresh water bodies. Plankton collection from local water bodies have been done and introduced into the laboratory conditions. The cylopoid copepdes were identified as a suitable predator for mosquito larvae. They were then maintained in the laboratory for experimental trials. A suitable culture method was introduced during this experiments. A fresh water medium charged organically with straw and cow-dung was prepared and seeded with parotozoan paramecium to proliferate. This could sustain a feeding support for copepods. Copepodes were maintained in this laboratory cultures, used for experimental trials. Experiments were designed to check the efficiency of copepods to feed on mosquito larvae. It was identified that there is a limit of copepods population to be maintained in a container. Overcrowding is reducing the efficiency of feeding due to intraspecies competition. Optimum level of copepods could be identified. Mosquito larvae were disappeared partially in the copepod culture medium due to predation. Total elimination could not be achieved by using copepods. Also found that copepods could feed only on first instar stage of the larvae, grown up larvae escape this predators. This conclude that copepods can be used as a control agent as part of an integrated pest management programme.

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**Asso.Professor (Rtd)& Research Guide, Dept of Zoology, Mar Ivanios College,Tvpm-15*