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Prevalence of micro-fauna associated in rice field habitats in Kurunegala district in Sri Lanka and potential mosquito larvicidal effect of *Vorticella microstoma*

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Micro-fauna are associated with most of the mosquito larval breeding habitats in tropical climate. There may be parasitic, pathogenic or even predatory species among these biota to mosquito larvae and their potential use against mosquitoes is a new avenue of study in vector control. Rice fields are common breeding sites for certain vector mosquito species in Sri Lanka. The objective of the present study was to find the prevalence of micro-fauna in order to search for potential parasitic or pathogenic taxa/ species associated with mosquito larvae inhabiting rice field breeding habitats and to carry out bioassays for potential taxa. Sampling was done from paddy fields (n=12) in Kurunegala district using a metal larval scooper and the samples were preserved using Rose Bengal solution. Twelve micro-fauna species were recorded; the highest abundance was recorded from *Vorticella microstoma* (62.68%). Other micro-fauna species recorded were *Zoothamnium* sp., *Diurella stylata*, *Keratella valga*, *Lecane luna*, *Monostyla bulla*, *Philodina citrina*, *Acanthocystis aculeata*, *Canthocamptus staphylinus*, *Daphnia longis*, *Notholca acuminata*, *Arcella arenaria*. Also, 98.60 % of mosquito larvae which were collected from rice fields belonged to the genus *Culex*. *Culex gelidus* and *Culex tritaeniorhynchus* represented the majority of samples (76.26%) and the highest abundance was recorded from *Cu. gelidus*. Study revealed that *Vorticella microstoma* trophont stage was lethal to *Cu. tritaeniorhynchus* and *Cu. quinquefasciatus* larvae. Bioassay resulted that, 32.14% of *Cu. quinquefasciatus* died 05 days after infection with lab maintained *V. microstoma* cultures. Pupation was also delayed compared to the duration of normal life-cycle and only 10.71% of population emerged as adults. 100% mortality was recorded from *Cu. quinquefasciatus* in 2 days of infection with *V. microstoma*. The mean mortality percentage of two mosquito species studied were significantly different from each other (IBM SPSS Software, One-Way ANOVA: P<0.05). Trophonts of *V. microstoma* were infected to thorax, abdominal segments and anal papillae regions of larvae. The results of study revealed that *Vorticella microstoma* could be used as killing agent of mosquito larvae in future studies and would be a new avenue to work on environmentally agreeable manner in reducing the *Culex* spp. mosquito populations.

Keywords: *Culex*, micro-fauna, trophont, *Vorticella microstoma*

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