Temporal Study on Vector Mosquitoes Inhabiting Rice Fields during Yala Season in Kurunegala area of Kurunegala District in Sri Lanka

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The present study was carried out to determine the variation of mosquito larval density and diversity in rice field habitats located in Kurunegala area over a study period from March to July (Yala season) in 2012. Samples of mosquito larvae were collected with the standard mosquito scooper using dipping method, and sampling was continued biweekly in ten sampling sites within an area of 20 km^2. Larval samples were identified up to the species level in the laboratory using 4th instars and some portion of larvae was reared within the laboratory for adult identification. Morphological identification of 1538 (30 scoops per site) mosquitoes collected from rice fields in Kurunegala area during the study period was dominated by Genus *Culex* (81.7%). *Culex tritaeniorhynchus, Culex gelidus, Culex fuscocephala* and *Culex pseudovishnui* represented the majority of samples, which are potential Japanese encephalitis vectors. About 50% of recorded *Culex* mosquitoes in rice fields of Kurunegala area were *Culex tritaeniorhynchus.* Other than the Genus *Culex*, mosquitoes belonging to Genus *Aedes, Anopheles,* and *Mansonia* were also recorded from the rice fields in Kurunegala area. Results revealed that the Shanon-Weiner diversity index for the mosquito species in rice fields of Kurunegala area is 1.48. Density variation of *Culex gelidus* and *Culex tritaeniorhynchus* in rice fields in Kurunegala area was shown a negative correlation over the study period (Pearson correlation = -0.974 and $P < 0.05$). *Culex gelidus* were recorded in high densities in March and decreased in April and then drastically decreased in May to zero density, since the water level was increased in late March, whereas *Culex tritaeniorhynchus* were recorded in low densities in March and April and then increased to higher densities in May, June and July with the higher water levels (3-4 inches) in rice fields.