

Mosquito diversity between logged and unlogged forest areas in Kalabakan Forest Reserve, Sabah

ABSTRACT

Mosquitoes were sampled in an undisturbed area within the trail in the forest near the Maliau Basin Conservation Area (MBCA) and in a disturbed area within the Logged Forest Experimental (LFE) area near the SAFE Project camp site. A total of 48 days of sampling was done in both areas in a bi-monthly sampling starting June 2016 to April 2017. The aims of this study were to investigate the species diversity and peak biting hours of mosquitoes in both sites. A total of 807 individuals from 17 species were caught using manual collection method of Human Landing Catch (HLC). 15 species were collected in MBCA while only 9 species were collected in LFE. Based on Generalized Linear Mixed Model (GLMM), there was a significant difference of mosquito abundance between LFE and MBCA ($p < 0.05$) and mosquito day biting time ($p < 0.05$). Also, based on Independent T-test analysis, there was a significance difference in terms of mosquito diversity level and abundance ($p < 0.05$). In this study, LFE had higher mosquito abundance with a total of 563 mosquito individuals caught compared to MBCA with 244 mosquito individuals. In both areas, more species were recorded during day time samplings than night time samplings. *Anopheles balabacensis*, *Aedes albopictus*, *Heizmannia scintillans* and *Culex vishnui* were among the predominant species collected in LFE while in MBCA species collected were *Heizmannia scintillans*, *Anopheles umbrosus*, *Aedes albopictus* and *Armigeres jugraensis*. LFE had peak biting hours around 2:00 p.m., 5:00 p.m., 7:00 p.m. and 9:00 p.m. while for MBCA, the peak biting hours were between 2:00 - 3:00 p.m. and 6:00 p.m.