

Species Composition of Anopheles Mosquitoes in Danum Valley, Lahad Datu, Sabah

ABSTRACT

Malaria continues to be a public health concern globally, while in Malaysia, cases remain high among interior communities in Borneo, including in Sabah. We studied the *Anopheles* species in Danum Valley, Lahad Datu, by random sampling of mosquitoes in the virgin forest of the Danum Valley Conservation Area (VF), low-ground regenerated forest (100m above sea level) (LRF) and high-ground regenerated forest (400m above sea level) (HRF). Over 12 trap nights, a total of 839 individuals of *Anopheles* mosquitoes belonging to nine species were collected with mosquito magnet: *Anopheles asiaticus* (94), *An. balabacensis* (12), *An. barbumbrosus* (7), *An. fragilis* (640), *An. interruptus* (38), *An. jamesii* (9), *An. latens* (5), *An. maculatus* (17) and *An. montanus* (17). Among them, are vectors for zoonotic malaria in Malaysia namely *Anopheles balabacensis* (1.43%), *An. maculatus* (2.03%) and *An. latens* (0.60%), albeit relatively low in numbers. HRF had the highest number of *Anopheles* mosquitoes collected (670), followed by LRF (130) and VF (39). Both Simpson's (D) and Shannon-Wiener (H) diversity indices were highest at LRF (D = 2.07; H = 1.2 with highest Species Evenness, E = 0.58), followed by HRF (D = 1.62; H = 0.8; E = 0.39) and VF (D = 1.31; H = 0.47; E = 0.43). Greater numbers of the malaria vectors were found in LRF and HRF, compared to VF suggesting that there may be greater exposure to vectors and vector-associated diseases when entering these regenerated forests. Significant differences ($p < 0.05$) for different forest types were detected for the total number of mosquitoes, total *Anopheles* and *An. fragilis* between different forest types.