

Species diversity and abundance of suborder Brachycera at two different elevations of Denai Hutan Cadamba, UiTM Puncak Alam

Azra Afiqah Mohd Affandi & Siti Khairiyah Mohd Hatta

Structured Abstract

Background: Diptera, also known as "true " or two- winged flies and Brachycera is a prominent suborder of Diptera which comprises about 120 families.

Methods: A study on diversity and abundance of suborder Brachycera was carried out for two weeks at Denai Hutan Cadamba, UiTM Puncak Alam using malaise traps. Two study sites were chosen, namely lower elevation at around 70 metres above the sea and the other in higher elevation at about 110 metres above the sea. One malaise trap was placed for each elevation for two weeks before all the samples were collected, sorted and identified until family level.

Results: The total number of brachyceran collected at Denai Hutan Cadamba were 496 individuals representing 32 morphospecies and 17 families. Brachyceran were discovered to be more abundant in trap 2, located at the high elevation with a total of 331 individuals compared to trap 1, which is located at low elevation where 165 individuals were collected. Family Drosophilidae has the most individuals collected with a total of 123 while Family Dryomyzidae, Scathophagidae, Asilidae and Scenopinidae had the least number of individuals recorded with only one collected. Based on the data analysis performed, the Shannon-Wiener Diversity Index (H') and The Margalef Index (R') value were higher in trap 2 with the value $H'= 2.010$ and $R'=2.585$, whereas trap 1 recorded a value of $H'= 1.691$ and $R'=1.959$. However, the value of the Evenness Index (E') was highest at trap 1 with $E'=0.493$ compared to trap 2 with $E'=0.466$. The Mann-Whitney U test confirmed a significant difference was found in the distribution of the Suborder Brachycera between the low and high elevation with $P<0.05$.

Conclusion: In brief, the diversity and distribution of brachyceran is different across trap 1 (low elevation) and trap 2 (high elevation). Some factors such as temperature variation and the degree of exposure to the light might be the reasons behind these findings. This study is essential because it will give an outline for future entomology research at Puncak Alam and will contribute in some way to educate the public about the value of this species to nature.

Keywords: Altitude, distribution, elevations, flies

*Correspondence: 2020853674@student.uitm.edu.my

Faculty of Applied Sciences, Universiti Teknologi MARA, Shah Alam, Malaysia