

## **Diversity and Abundance of Mosquitoes (Diptera: Nematocera) at Two Different Elevations of Cadamba Trail, UiTM Puncak Alam**

Intan Nur Izzati Rosselan<sup>a</sup>, Siti Khairiyah Mohd Hatta<sup>a\*</sup>

### **Structured Abstract**

**Background:** Diptera has two-winged or so-called true flies and Nematocera such as midges, gnats, mosquitoes and crane flies are a relatively primitive family of Diptera which comprises about 108 families.

**Methods:** A study on diversity and abundance of Suborder Nematocera was conducted for two weeks at Cadamba Trail, UiTM Puncak Alam using malaise traps. Two study sites were chosen which are low elevation (70m above the sea level) and the high elevation (110m above the sea level). One malaise trap was placed for each elevation for two weeks before the samples were collected, sorted, and identified until family level.

**Results:** The total Nematocera collected at Cadamba Trail were 1101 individuals representing 51 morphospecies and eight families. Nematocera have been discovered to be more abundant at trap 2 which is located at high elevation with the total 600 individuals from eight families, and 40 morphospecies compared to trap 1 which is located at low elevation where individuals collected only 501 from seven families and 35 morphospecies. Family Cecidomyiidae has the highest individuals collected with a total of 368 and family Psychodidae has the least number of individuals which is only one individual. Based on the data analysis performed, the Shannon-Weiner Diversity Index ( $H'$ ), the Evenness Index ( $E'$ ) and the Margalef Index ( $R'$ ) value were the higher in trap 2 with the value  $H'=2.987$ ,  $E'=0.484$  and  $R'=6.253$  respectively. However, trap 1 recorded  $H'=2.763$ ,  $E'=0.453$  and  $R'=5.469$ . The Mann-Whitney U test confirmed that there is a significant difference between the distribution of Nematocera at low and high elevations with  $P<0.05$ .

**Conclusion:** In conclusion, the diversity and abundance of Nematocera is different across trap 1 (low elevation) and trap 2 (high elevation). This might be due to some factors such as temperature, sunlight, and the proximity to the entrance. This research is essential because it will provide information and facts about the species and the unique characteristics of this suborder. The result of this study can be helpful, and more knowledge can be acquired as a resource for future research.

**Keywords:** Elevations, abundance, flies

---

\*Correspondence: [sitikhairiyah@uitm.edu.my](mailto:sitikhairiyah@uitm.edu.my)

<sup>a</sup>School of Biology, Faculty of Applied Sciences, Universiti Teknologi MARA, 40450 Shah Alam, Selangor, Malaysia.