

A Preliminary Study of Ant (Hymenoptera: Formicidae) Diversity in UiTM Puncak Alam.

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Structured Abstract

Background: Ants are an ideal model group for biodiversity research due to their moderate species richness. Study on ant diversity in Selangor, specifically at UiTM Puncak Alam are still lacking. This study was performed to determine the diversity and abundance of the Formicidae in UiTM Puncak Alam and to compare and find the best trapping methods between pitfall traps and handpicking.

Methods: This study was conducted from 26th February to 18th March 2023. Three selected areas were established where the pitfall trap was placed at each study site in Denai Cadamba Forest, an area behind Perpustakaan Tun Abdul Razak, and Tasik Alam Bina. Two methods were used in this study which are handpicking and pitfall trap.

Results: Overall, there were 16,575 individuals of ants were captured. Three subfamilies were collected: Formicinae 82.6%, Myrmicinae 11.7% and Ponerinae 5.7%. The most abundant ant species recorded in this study is *Anoplolepis* sp., commonly known as yellow crazy ants, with 11,195 individuals while the least number of individuals captured were *Dinomyrmex* sp., and *Solenopsis* sp. The identified species were *Anoplolepis gracilipes*, *Brachyponera obscurans*, *Camponotus compressus*, *Camponotus camelinus*, *Camponotus* sp., *Colobopsis leonardi*, *Dinomyrmex gigas*, *Polyrhachis dives*, *Polyrhachis abdominalis*, *Myrmecina* sp., *Solenopsis* sp., *Pachycondyla vidua*, *Leptogenys diminuta*, and *Odontomachus simillimus*. Pitfall traps have recorded 88% of individuals compared to 12% using handpicking method. The Shannon-Wiener Diversity Index (H') for pitfall traps ($H'=1.225$) is slightly higher compared to handpicking methods ($H'=1.221$). Evenness Index, E' value was the highest using handpicking method at $E'=0.2608$ compared to pitfall Trap ($E'=0.2002$). Meanwhile, the Margalef Richness Index, R' value in Pitfall Trap ($R'=1.656$) indicates that the species richness was greater than the handpicking method.

Conclusion: This study offers valuable insight about the diversity and abundance of Formicidae in UiTM Puncak Alam as well as the effectiveness of various sampling techniques. The finding is still premature, and more samplings need to be done in a bigger sampling area, utilizing various sampling techniques to obtain a better picture of ant diversity in the study area.

Keywords: diversity, abundance, formicidae, ants

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