

Species Diversity and Abundance of Suborder Apocrita at Oil Palm Plantation, Banting, Selangor.

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Structured Abstract

Background: Insects are classified as Arthropods and Insecta, with Arthropods featuring jointed appendages, segmented bodies, and a hard exoskeleton. Hymenoptera, a diverse insect order, includes ants, bees, wasps, and sawflies, and is divided into Symphyta and Apocrita suborders. Apocrita, characterized by a distinctive wasp waist, includes ants, bees, and wasps, while Symphyta consists of sawflies and woodwasps. This study aimed to assess the diversity and abundance of Apocrita in the Banting Oil Palm Plantation, comparing three areas. It also sought to explore habitat requirements and evaluate the impact of oil palm cultivation on these insects.

Methods: Three Malaise trap are used to collect sample of Apocrita. Each of them are installed at different areas in the oil palm plantation (Inner, Middle, Outer) with distance between trap is 100 meter. The collecting jar of each trap filled with a 70% alcohol solution to preserve and immobilize the specimens. The trap were left unattended for a month. The data collected then were analysed using diversity indices such as the Shannon-Wiener Diversity Index, Evenness Index and Kruskal-Wallis Index.

Results: This study highlighted the impact of environmental factors such as water availability, vegetation cover, sunlight, soil moisture, and on the abundance and diversity of Apocrita insects in oil palm plantations. Understanding these factors is vital for insect biodiversity management in agriculture. Since Apocrita insects aid in pollination and pest control, further research is needed to explore additional families and influencing factors.

Conclusion: In conclusion, the study emphasized how environmental factors such as water availability, vegetation cover, sunlight, soil moisture, and noise impact the abundance and diversity of Apocrita insects in oil palm plantations. Understanding these factors is crucial for conserving and managing insect biodiversity in agricultural settings. Since many Apocrita insects serve as pollinators and natural predators, this research is valuable for agriculture, where effective pollination is essential for high-quality yields. Further research on Apocrita is recommended to explore additional families and factors influencing their abundance, richness, and evenness.

Keywords: Hymenoptera, Oil palm, Apocrita, Bees, Ants

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