

UNIVERSITI TEKNOLOGI MARA

**MITES ASSOCIATED WITH
DECOMPOSING RABBIT
CARCASSES AT FOUR
DIFFERENT LOCALITIES IN
MALAYSIA**

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MSc

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AUTHOR'S DECLARATION

I declare that the work in this thesis was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the results of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

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ABSTRACT

Recent development in forensic acarology has raised the interest of researchers on the importance and use of Acari in death investigations. Understanding changes in ecoregions that affected the mites' diversity and abundance is important as they are useful as forensic indicators to detect location of death and determination of minimum post-mortem interval (mPMI). Therefore, the aim of this study was to determine the diversity and abundance of forensically important mites at 4 different ecoregions in Malaysia. Three rabbit carcasses were placed at each different locality namely forest, highland, village, and oil palm plantation. One hundred gram of soil samples were collected from beneath and around the decomposing carcasses every three days until the carcasses reached the skeletonization stage (i.e., 40 days). The soils were then placed in the Berlese-Tullgren funnel for extraction of mites prior to slide mounting for identification to the family level. The ambient temperature and the amount of precipitation for each location were recorded. The abundance of mites in the forest was significantly higher than the other study sites ($P < 0.05$) with the mean abundance of 7.47 ± 7.52 . Mites recovered from highland (5.30 ± 8.58) and oil palm plantation (4.23 ± 5.49) were significantly higher than those from the village (1.92 ± 3.52). The most abundant family of mites of forensic importance in the forest was Macrochelidae; Histiostomatidae, in highland, and Acaridae in both village and oil palm plantation. The soils samples collected from beneath and around the carcasses contain significantly more mites than those in the control soil ($P < 0.05$). The introduction of carrion to the soil ecosystem has caused significant changes in the abundance of mites and further study is therefore needed to validate these changes as geographical and mPMI indicators.

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