

UNIVERSITI TEKNOLOGI MARA

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

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MSc

December 2019

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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Thesis Title : Mites Associated with Decomposing Rabbit Carcasses
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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.

ACKNOWLEDGEMENTS

In the name of Almighty God, Most Gracious and Most Merciful, all praises to Him for continuously giving me guidance, strength and opportunities to complete successfully my research project and this thesis within the time limit given.

First of all, I would like to thank UiTM for the brilliant support under grant LESTARI and GIP. Special thanks to Associate Professor Dr. Aman Mohd Ihsan Mamat, Head of Graduate Studies (Research Programme) and Associate Professor Dr. Rohana Abdul Ghani, the Deputy Dean of Postgraduate and Professional Training of the Faculty of Medicine for allowing the research to be conducted. Many thanks to Dr. Siti Hamimah, Director of Institute for Medical Molecular Biology (IMMB) for consenting research facilities to be used.

My deepest appreciation goes to Dr. Heo Chong Chin, my supervisor for this research project. Without his advices, motivation and enthusiasm, this project would not have run smoothly. Therefore, numerous thanks to my supervisor for his time, efforts and trust in me to finish the planned project. Other than that, I would like to thank my co-supervisor, Dr. Mariana Ahamad, for her continuous support during the entire process of the research. Huge thanks to Dr. Barry OConnor from University of Michigan, Ann Arbor, USA for his help in the confirmation of the identification of mites.

I would like to thank also the laboratory staffs of IMMB, especially Puan Roslinah Ali, research officers of Unit of Acarology Institute for Medical Research (IMR) especially Puan Ernieenor Faraliana Che Lah, for the facilities and training. Numerous thanks to the government bodies that have approved the study locations such Forestry Department of Peninsular Malaysia (JPSM), Malaysia Agriculture Research and Development Institute (MARDI), Federal Land Development Authority (FELDA).

I am grateful to my parents, Zamri bin Jamil and my brother, Azmirul Ikmal and other family members for their endless encouragement, patience and support. Many thanks for my research buddies under the same department especially Sakinah Md. Sofian for the assistance during fieldwork. I am indebted to my entomology lab members, Sarabjit Singh, Nur Aliah Natasha Azmi and Sharifah Nadiah binti Syed Idrus. Their lively passion and motivations in research inspired me to complete this journey. A grateful note to the rest of the postgraduate students in IMMB from different departments who have shared ideas and encouragements.

I dedicated my respect and sincere gratitude to all the rabbits, insects and mites that have been sacrificed for the advancement of Science through this study. Last but not least, thank you to those who have either directly or indirectly, assisted me during the completion of this study. Your immeasurable effort would not be forgotten.

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