



UNIVERSITI PUTRA MALAYSIA

***COMPARISON POPULATION OF RAT SPECIES COMPOSITION IN
BETWEEN PETALING JAYA AND SUBANG JAYA WITH PARTICULAR
REFERENCE TO ON RATTUS RATTUS, RATTUS NORVEGICUS AND
SUNCUS MURINUS***

NOR SYAHIRAH BINTI MOHD YUSOFF

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A project report submitted of Faculty of Agriculture, University Putra Malaysia, in fulfillment of requirement of PRT 4999 (final year project) for the award of the Degree of Bachelor of Agriculture

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CERTIFICATION

This project entitled “Comparison Population Of Rat Species Composition In Between Petaling Jaya And Subang Jaya With Particular Reference To On *Rattus Rattus*, *Rattus Norvegicus* And *Suncus Murinus*” is prepared by Norsyahirah Binti Mohd Yusoff and submitted to the Faculty of Agriculture in fulfillment of the requirement of PRT4999 for the award of the Degree of Bachelor of Agriculture Science.

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ABSTRACT

The increase in human population in urban center, rat is anticipated to increase in number tremendously the rapid development in urban areas and the increase in connectivity with the rural areas through movement of the human population and means of transportation, distribution of rat population and species composition may have changed. Therefore there is a need to survey the rat population in the cities. In the particular project, there is the particular interest to determine the rat species distribution so as to match with control method. The experimental initiative of using barn owl in the cities may requires a knowledge of the rat species in order to understand the prey preference of the former and its effectiveness in the respective rat control programme.. Specifically, the main objective of this study was to compare rodent species in selected urban areas i.e Subang Jaya and Petaling Jaya in Selangor. An additional investigation on ectoparasite identification of the respective rat species was carried out as comparison for similarities or differences as a result of difference in habitat preference.

The area chosen for the study site was Subang Jaya and Petaling Jaya. The method employed in this study was removal method. Location of study on rattus species was conducted at two different places at Pasar Jalan Othman and Subang Jaya area to estimated population of rat in both area. Once rattus species have been capture, they were killed by using chloroform and their size, weight and sex were measured. The results of population density were analyses by using statistic

method. The result of population density showed *Rattus norvegicus* are higher than *Rattus rattus* in both area. The finding of these study would contribute to a better understanding of rat ecology in urban area which is extensile for exobiological control.



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CHAPTER 1

1.1 INTRODUCTION

Rat is a rodent that has been known as pest in human habitation. Nowadays, rats have been a serious pest disrupting human activities in the urban areas everywhere. They will consume anything edible. There are three rat species in the cities such the roof rat, *Rattus Rattus* and the Norway rat *Rattus novengicus*. *Rattus rattus* is also known as the house, black rat or ship rat. *Rattus rattus* are normally found in tropical and temperate regions. However, some population, more adapted in cooled regions. *Rattus novengicus* also known as the brown rat or Norway rat is common around the globe except in Antartika.

Apart from damaging properties and consuming food more importantly they transmit diseases to human being with bacteria and other micro organism as pathogen. The mode transition of these disease can be through contamination of food, drinking water or ecto or endoparasite as vector. Some of these diseases are hantavirus, bubonic plague, rat-bite fever and salmonellosis (NPMA, 2013). The disease of greater concern today is leptospirosis caused by bacterial infection. Human come into contact with the bacteria when physically exposed to contaminated water with rat urine which carries the bacteria. (David and Paul,2015).

There are numerous methods to control such as by using trap, rat poison, flushing and hunting down and biological method by using barn owl and application biorodenticide. The application of rodenticide has to be regulated such that formulation of lower toxicity is used. This will reduce the risk of contamination of the environment and posses less risk to the wildlife.



1.2 PROBLEM STATEMENT AND OBJECTIVE

The increase in human population in urban center, rat is anticipated to increase in number tremendously the rapid development in urban areas and the increase in connectivity with the rural areas through movement of the human population and means of transportation, distribution of rat population and species composition may have changed. Therefore there is need to survey the rat population in the cities. In the particular project, there is the particular interest to determine the rat species distribution so as to match with control method. The experimental initiative of using barn owl in the cities may requires a knowledge of the rat species in order to understand the prey preference of the former and its effectiveness in the respective rat control programme.. Specifically, the main objective was to compare rodent composition in selected urban areas i.e Subang Jaya and Petaling Jaya in Selangor. An additional investigation on ectoparasite identification of the respective rat species was carried out as comparison for similarities or differences as a result of difference in habitat preference.

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