



UNIVERSITI PUTRA MALAYSIA

**THE RANGING BEHAVIOUR OF MALE BARN OWLS AS BIOLOGICAL
CONTROL AGENTS OF RATS IN SUBANG JAYA**

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**THE RANGING BEHAVIOUR OF MALE BARN OWLS AS BIOLOGICAL CONTROL
AGENTS OF RATS IN SUBANG JAYA**

BY

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Hereby is it certified that Muhamad Amin bin Zabidi has completed his project entitle The Ranging Behavior of Male Barn Owls as Biological Control Agents of Rats in Subang Jaya and he is qualified to submit the following report to the Faculty Agriculture as a partial fulfillment in attaining a Degree of Bachelor Science Agriculture is accepted.

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(Dr. Hafidzi Mohd Nor)

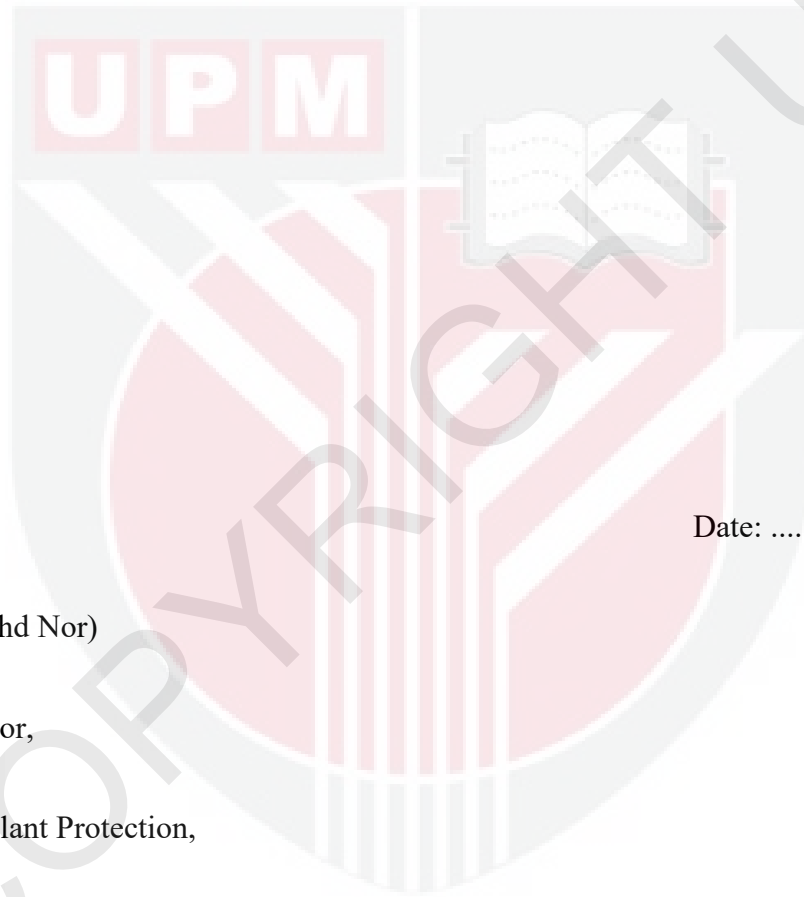
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LIST OF CONTENT

	PAGE
ACKNOWLEDGMENT	I
CONTENT	II
ABSTRACT	IV
CHAPTER 1 INTRODUCTION	
1.1 Introduction	1
1.2 Objectives	1
CHAPTER 2 LITERATURE REVIEW	
2.1 History of barn owl in Malaysia	4
2.2 Rat problem in the urban area	6
2.3 Biology control of rats	8
2.4 Classification	
2.4.1 Identification of barn owl	10
2.4.2 Barn owl vision	10
2.4.3 Barn owl hearing	12
2.4.4 Feeding behavior	12
2.4.5 Searching for prey	13
2.4.6 Breeding	14
2.4.7 Circadian rhythm of barn owl	15
CHAPTER 3 METHODOLOGY	
3.1 Location of study	17
3.2 Tracking	18

3.3 Data analysis	19
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CHAPTER 4 RESULT AND DISCUSSION

4.1 home range male barn owl in PJ9	20
-------------------------------------	----

4.2 home range male barn owl in SS14	21
--------------------------------------	----

4.3 Discussion

4.3.1 Barn owl newly introduced area	35
--------------------------------------	----

4.3.2 Release Technique Effects on Reintroduction success	38
---	----

4.3.3 The important acclimatization of barn owl	39
---	----

CHAPTER 5 CONCLUSION AND RECOMMENDATION 40

REFERENCES	42
-------------------	----

APPENDIX	47
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ABSTRACT

Barn owl has been established as biological control agents of rats in oil palm plantation and rice field. In view of the increasing rat infestation in the urban area, an attempt is made to introduce barn owl in this area. Subang Jaya has been chosen for the first release of barn owls for this purpose. Using radio telemetry the movement of barn owl was followed over a period of time. The objective is to determine the home range size and core area of male barn owls in a newly introduced area and also to investigate male exploratory behavior in a newly introduced area. Two males barn owls and will be harnessed with a radio transmitter and tracked in the evening from 6 p.m to 6 a.m. Tracking data will be collected for at least 5 nights in month. The hourly distanced travelled will reflect the activity levels over the time interval. This will enable the plotting of levels of activity over the duration the owls were followed. The Biotas software will be used to analysed the data. The male barn owls is the bigger home range size and in a newly introduced

1. INTRODUCTION

In the final year project, there are some objectives to be achieved. Firstly, we determine the home range size and core area of male barn owl in a newly introduced area. We investigate male behavior in a newly exploratory area. The problem statement in this project is serious rat problem in the urban areas. The use of rodenticide will harm the environment. Keep an alternative method to control rats to avoid the negative effects. We apply the biology control in urban area for firstly in Malaysia. Barn was release in urban area to control the rat.

Biological control is very good control because it does not use chemicals to control pests. In addition, these controls do not use chemical pesticides that are harmful to the environment. This control is now actively used by farmers in agricultural areas, especially in the area of paddy fields and palm. They use the barn owl to control rodents in the area. As we know this bird is a predator of rats. So far it is highly effective in practice in the area of paddy fields and palm. Rat problem in urban areas is very serious and the damage and disruption to many people. These rats can spread dangerous diseases. Before this method used is chemical control. It turns out that this control is less effective because rodents are tolerant to the toxin. After that, new initiatives have been taken to control rodents in urban areas. His new initiative is biological control using barn owl.

Tyto alba has about 28 subspecies can be found worldwide. This bird is found in Malaysia and some other tropical countries. Most of these birds were found in the area of oil palm estates and paddy fields. This is because the owls are very helpful to control the rat population in the agricultural area. The maturity of this bird is about 2 months old. These birds

can live 5 to 10 years. The population of this bird high in September and was able to produce 28 eggs in a year.

The barn owl was release in Subang Jaya to control a high population of a rat. It is worrying many parties because a rat is carriers of the disease successfully. The rats are *Rattus rattus* and *Rattus novergicus*. Norway rat (*Rattus norvegicus*, also called the brown rat or sewer a rat) is a destructive pest found in urban neighborhoods and suburbs. The rats eat and contaminate food, damage buildings and other property by biting and burrowing them, and can spread diseases that affect humans and pets. *Rattus rattus*, it has a longer tail than *Rattus novergicus*. This rat can cause in urban area such as a short circuit occurs. In addition, a rat can cause damage to the food directly and indirectly such as contamination by feces and urine. This is the factor that cause food poisoning occurs. The predator is able to control rats is *Tyto alba*

Barn owl is a bird that is active at night. At night he would roam to find food, the rats. Furthermore rats will come out of the nest or holes in search of food. In urban areas the situation quiet evening helping rats looking for food. Therefore, the use of owls in biological control is very effective for a long time. Owl has eyes that can see at night. These points work well and help owls hunt more efficiently. Ability keen eye can detect the movement of the mouse properly. In addition, the owls have less competition in terms of seizure of the area while searching for food. This can avoid a fight between owls in an area. Hunting mice efficiency can be improved in order to reduce the growing rat population. The barn owl only needs 70 hectares to found it feed. The barn owl used sharp hearing for to detect rats. The shape of the face and the composition and structure of the hair is very helpful in hearing the sound sharp. Owls have wings that can fly special as quietly unnoticed prey. This is because owls have soft feathers. In addition, with its wing capabilities, it is able to hear any sound when hunting. In addition, the owls have

feet that are the main weapon in catching prey. These birds are equipped with sharp claws to be used for catching mice. While in the air, sharp claws are used for holding and killing rats. Owls have a configuration toes can fluctuate either tridactyl and zygodactyls. Tridactyl is three fingers in front, while zygodactyls is a pair of fingers in front and behind a pair of fingers. It provides its own uniqueness to the owls, these birds are able to capture and hold the mouse body with the best and most effective. This is a privilege owls head can swivel 360 degrees. This capability can facilitate observing owls prey around. Brightly colored owls can be seen whiteness cold regions. Owls are found in the Polar Regions are very cold, but the distribution of the population in almost all areas in the world. It turns out that owls are effective predators for the rats. As we know, in the urban area where the rat population is increasing such as in the markets and in the disposal of bad rubbish. Food rodents become more and growing rat population in urban areas. So owls have plenty of food and biological control is suitable for used.

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