



UNIVERSITI PUTRA MALAYSIA

***HEMOTROPIC MYCOPLASMA OVIS INFECTION RATE AMONG
GOATS IN LADANG ANGKAT, FACULTY OF VETERINARY
MEDICINE, UNIVERSITI PUTRA MALAYSIA***

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FPV 2015 50

**HEMOTROPIC *MYCOPLASMA OVIS* INFECTION RATE AMONG GOATS
IN LADANG ANGKAT, FACULTY OF VETERINARY MEDICINE,
UNIVERSITI PUTRA MALAYSIA**

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A project submitted to the
Faculty of Veterinary Medicine, Universiti Putra Malaysia
In partial fulfilment of the requirement for the
DEGREE OF DOCTOR OF VETERINARY MEDICINE

Universiti Putra Malaysia
Serdang, Selangor Darul Ehsan

MARCH 2015

It is hereby certified that we have read this project paper entitled “Hemotropic *Mycoplasma Ovis* Infection Rate among Goats in Ladang Angkat, Faculty of Veterinary Medicine, UPM”, by Nurul Hafizah Bt. Abu Jazid and in our opinion it is satisfactory in terms of scope, quality, and presentation as partial fulfilment of the requirement for the course VPD 4999 – Final Year Project.

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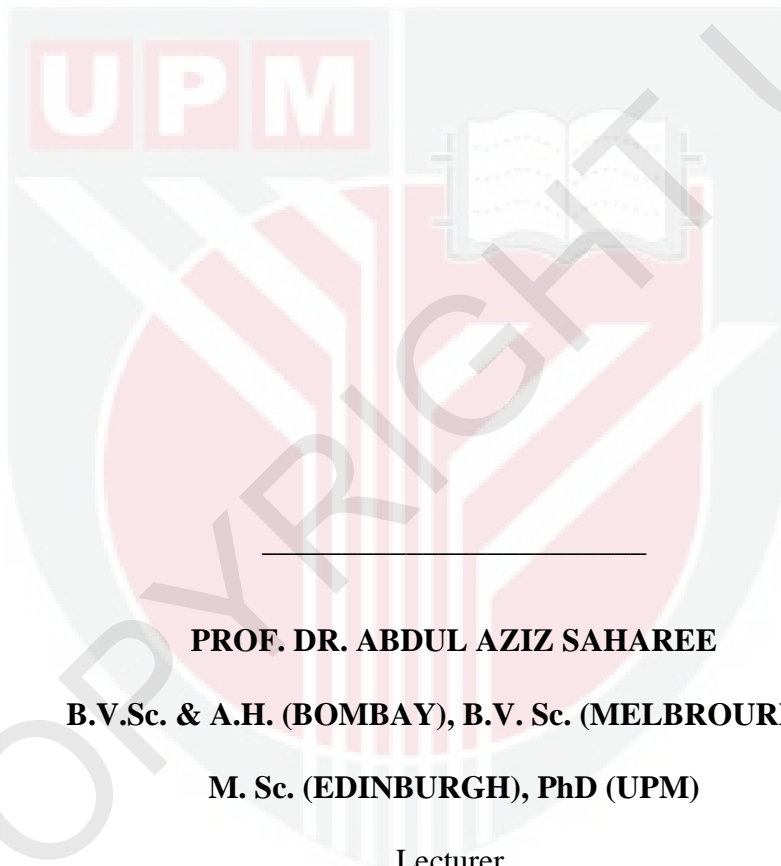
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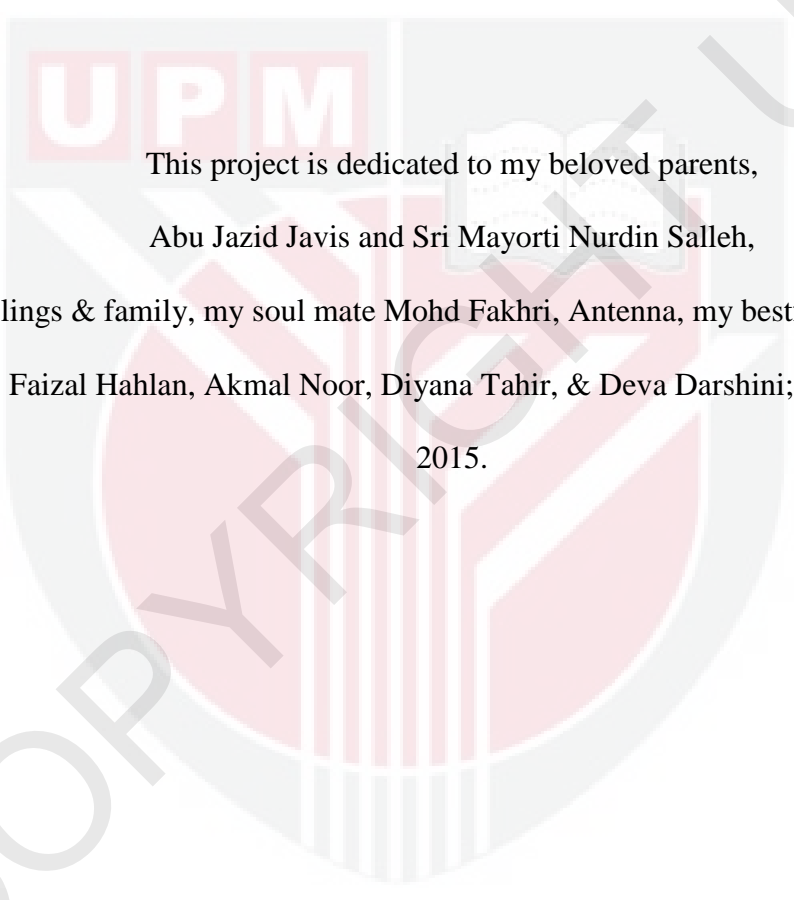
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DEDICATION



This project is dedicated to my beloved parents,
Abu Jazid Javis and Sri Mayorti Nurdin Salleh,
my siblings & family, my soul mate Mohd Fakhri, Antenna, my bestfriends: Izdihar
Ishak, Faizal Hahlan, Akmal Noor, Diyana Tahir, & Deva Darshini; & DVM class
2015.

ACKNOWLEDGEMENT

I would like to express my gratitude to my supervisor, Dr. Faez Firdaus Abdullah Bin Abdullah for his guidance, help and undivided attention while helping with this project.

I would also like to acknowledge my co-supervisor, Prof. Dr. Abdul Aziz Saharee, lecturers: Prof. Dr. Mohamed Ariff Bin Omar, and Prof. Dr. Abd Wahid Haron for their contributions toward the better understanding with my project and constructive comments.

The staff of Large Animal Ward, UVH and Mr. Jefri of Clinical Studies Laboratory of Faculty of Veterinary Medicine, Universiti Putra Malaysia for their patience while assisting me during my project.

Special thanks to my parents, family, Mohd Fakhri, my bestfriends: Izy, Akmal, Faizal, Diyana and Deva, for their continuous support. I would like to acknowledge all my friends who have helped me throughout this period.

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ABSTRAK

Abstrak daripada kertas projek yang dikemukakan kepada Fakulti Perubatan Veterinar untuk memenuhi sebahagian daripada keperluan kursus VPD 4999 – Projek Ilmiah Tahun Akhir

**KADAR JANGKITAN HEMOTROPIK MYCOPLASMA OVIS DALAM
KALANGAN KAMBING DI LADANG ANGKAT, FAKULTI PERUBATAN
VETERINAR, UPM**

Oleh

Nurul Hafizah Bt. Abu Jazid

2015

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Mikoplasmosis hemotropik menjangkiti kambing dan biri-biri di serata dunia, yang juga mendatangkan kerugian ekonomi. Di Malaysia, masih terdapat kekurangan maklumat bertulis mengenai jangkitan *M. ovis* dalam kalangan kambing. Dalam kajian ini, sampel diambil daripada 10 ekor kambing dari lima buah Ladang Angkat, Fakulti Perubatan Veterinar (FPV), dan jangkitan *M. ovis* dan beban parasit gastrousus masing-masing ditentukan menggunakan pewarnaan Giemsa dan teknik modifikasi McMaster. Perangkap lalat dipasang untuk menangkap lalat menggigit dan kertas soal selidik diberikan kepada setiap ladang. Semua data dianalisa secara

statistik. 47 sampel (94.0%) daripada 50 sampel adalah positif bagi jangkitan *M. ovis*. Antara sampel-sampel positif, 44 sampel (93.6%) merupakan jangkitan ringan, dan 3 sampel (6.4%) merupakan jangkitan sederhana dengan kadar jangkitan tertinggi dicatatkan adalah 38.5% parasitemia. Tiada lalat mengigit ditangkap; kertas soal selidik mendedahkan semua ladang terletak di kawasan endemik, dan kewujudan haiwan-haiwan pembawa. Analisa statistik menyimpulkan bahawa tiada perbezaan nyata antara telur per gram dan oosis per gram dibandingkan tahap parasitemia, dan tiada korelasi nyata antara kadar jangkitan *M. ovis* dengan telur dan oosis per gram. Kesimpulannya, kadar kejadian *M. ovis* adalah tinggi dalam kalangan kambing di Ladang Angkat FPV tetapi tahap parasitemia adalah ringan secara umumnya.

Kata kunci: *Mycoplasma ovis*, pewarnaan Giemsa, kadar jangkitan, teknik Modifikasi McMaster, kambing

ABSTRACT

An abstract of the project paper presented to the Faculty of Veterinary Medicine in partial fulfilment of the course VPD 4999 – Final Year Project

**HEMOTROPIC MYCOPLASMA OVIS INFECTION RATE AMONG
GOATS IN LADANG ANGKAT, FACULTY OF VETERINARY MEDICINE,**

UPM

By

Nurul Hafizah Bt. Abu Jazid

2015

Supervisor: Dr. Faez Firdaus Abdullah Bin Abdullah

Hemotropic Mycoplasmosis infects sheep and goats worldwide, which also lead to economic losses. For Malaysia, there is still lack of information documented for *Mycoplasma ovis* infection among goats. In this study, 10 goats from five Ladang Angkat, Faculty of Veterinary Medicine (FVM) were sampled, *M. ovis* infection and intestinal parasites burden was determined using Giemsa stain and Modified McMaster technique respectively. Fly trap was used to trap biting fly and questionnaire was given to each farm. All the data were statistically analysed. Out of 50 samples, 47 samples (94.0%) were positive with *M. ovis* infection. Among the positive samples, 44 samples (93.6%) were mild infection and three samples (6.4%)

were moderate infection with highest infection rate of 38.5% parasitemia. No biting fly was trapped; questionnaire revealed that all farms located in endemic area, and presence of carrier animals. Statistically, there were no significant difference in egg per gram (e.p.g) and oocyst per gram (o.p.g) with level of parasitemia, and there were no significant correlation between infection rate of *M. ovis* with e.p.g and o.p.g. As conclusion, occurrence rate of *M. ovis* is high among Ladang Angkat FVM but the parasitemia levels were generally mild.

Keywords: *Mycoplasma ovis*, Giemsa stain, infection rate, Modified McMaster technique, goats

1.0 INTRODUCTION

Mycoplasma ovis (*M. ovis*) or previously known as *Eperythrozoon ovis* is a wall-less, and pleomorphic bacterium that parasitizes the surface on erythrocytes of sheep and goats worldwide. *Mycoplasma ovis* causes chronic disease with low mortality but high morbidity in the host. Hemotropic mycoplasmosis is characterized by ill-thrift, anemia, icterus, depression and reduced weight gain, which eventually lead to economic losses to the small ruminant industry (Burroughs, 1988; Ershaduzzaman, 2001).

Parasitemia caused by *M. ovis* infection is often chronic, which persists up to 16 weeks and some cases demonstrated parasitemia up to 5 years (Daddow, 1981). Predisposing factors of this disease are pathogenicity of *M. ovis*, sheep breed susceptibility, concurrent diseases and management aspects (Sheriff, 1979). Ovine hemotropic mycoplasmosis was clinically seen in sheep of all age range (Neitz, 1940), and the infection remained persist for life (Sheriff, 1978).

The diagnosis of *M. ovis* organism in infected animals is based on the manifestation of either antigen or antibodies. Detection of antigen can be accomplished using morphological, cultural, biochemical, or molecular techniques. Example of method of detection of *M. ovis* organism based on morphology is thin blood smears stained with Giemsa which is the oldest, easiest and cheapest method of *M. ovis* identification (Ershaduzzaman, 2001).

The first report on *M. ovis* infection in Malaysia was in a sheep concurrently suffering from copper toxicity (Fatimah et al., 1994). The previous study of morphology characteristic of *M. ovis* in sheep and goats in Malaysia revealed that the organism as being coccoid and rod-like shape (Mariah et al., 1997). Prevalence of *M. ovis* infection in sheep in Malaysia was studied by Azman (1995) in several states of Malaysia, which revealed 50% of sampled farms were positive with this hemoparasite.

Abdullah et al. (2013) reported a clinical case of goat was diagnosed with Parasitic Gastro-Enteritis concurrent with hemotropic mycoplasmosis infection. According to the author there is still no study have been carried out related to *M. ovis* infection among goat population in Malaysia. Due to lack of documented information related to prevalence of this disease among goat population in Malaysia, the parasitemia level and contributing factors towards occurrence of this disease. Therefore this study was designed to have preliminary data related to hemotropic *Mycoplasma ovis* infection rate among goat population in selected goat farms.

The objectives of this study were to determine the hemotropic *Mycoplasma ovis* infection rate among goats, contributing factors of this disease, and correlation between contributing factors (presence of biting flies and intestinal parasites burden) with severity of parasitism of *M. ovis* infection among goats in farms under Ladang Angkat Program, Faculty Veterinary Medicine, UPM.

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