



***COMPARATIVE STUDY OF PARASITIC INFESTATION BETWEEN DUCKS
REARED IN CLOSED HOUSE SYSTEM AND OPEN HOUSE FREE RANGE
SYSTEM***

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**COMPARATIVE STUDY OF PARASITIC INFESTATION BETWEEN
DUCKS REARED IN CLOSED HOUSE SYSTEM AND OPEN HOUSE FREE
RANGE SYSTEM.**

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It is hereby certified that we have read this project paper entitled Comparative Study of Parasitic Infestation Between Ducks Reared in Closed House System and Open House Free Range System by Nur `Izzaty binti Halil and in our opinion it is satisfactory in terms of scope, quality and presentation as partial fulfillment of the requirement for the course VPD 4901- Project.

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DEDICATION

The final year project thesis is dedicated to my beloved family, all the lectures and friends that were involved either directly or indirectly in this project.



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ABSTRAK

Abstrak daripada kertas kerja projek tahun akhir yang disediakan untuk Fakulti Perubatan Veterinar sebagai salah satu komponen untuk kursus VPD 4999 (projek tahun akhir)

Kajian perbandingan tentang infestasi parasit di antara itik yang diternak melalui sistem rumah tertutup dan sistem rumah terbuka

oleh

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Penyelidikan mengenai infestasi parasit di dalam itik Pekin komersil yang diternak menggunakan sistem rumah tertutup dan sistem rumah terbuka telah dijalankan. Sebanyak 16 itik yang telah mencapai usia matang, 8 dari setiap jenis sistem penternakan yang berbeza telah dipilih secara rawak. Sampel darah dan bulu diambil sebelum penyembelihan dilakukan, dan kandungan usus dikumpulkan serta-merta selepas itik-itik disembelih di rumah sembelih. Sebanyak 48 sampel najis baru diambil dari lantai, 24 dari setiap system penternakan yang berbeza. Smear darah nipis diwarnakan dengan Giemsa menunjukkan keputusan negative terhadap *Leucocytozoon sp.* Tiada ekto parasite dijumpai daripada bulu. Pengapungan ringkas menggunakan isi kandungan usus memberi keputusan negative terhadap penemuan cacing dan telur cacing tetapi memberi keputusan positif di dalam sampel najis. Kajian yang telah dijalankan ini menunjukkan bahawa, tidak ada perbezaan dari segi

tahap infestasi parasite apabila itik dari sistem rumah tertutup dibandingkan dengan itik dari system rumah terbuka.

Kata kunci : itikPekin, cacing, ektoparasit, *Leucocytozoon sp.*



ABSTRACT

Abstract of the project paper presented to Faculty of Veterinary Medicine as partial component of the course VPD 4999 - final year project

Comparative study of parasitic infestation between ducks reared in closed house system and open house free range system.

by

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Parasitic infestation of commercial Pekin duck from closed house and open house free range system were investigated. A total of 16 matured ducks, 8 from each different rearing system was randomly selected; blood and feather samples were collected before slaughtered, and the intestinal content were collected immediately after slaughtering process in the slaughter house. A total of 48 fresh fecal samples from the floor were taken, 24 each from different rearing system. Thin blood smear stained with Giemsa shows negative result against *Leucocytozoon* sp. The feather was examined under dissecting microscope and shows negative result for ectoparasite. Simple floatation of the intestinal content shows negative result for helminth and its egg but fecal sample shows positive result for helminths. The present study shows

that, there is no significant difference of prevalence of parasitic infestation in closed house and open house free range system of Pekin duck.

Keyword :Pekin duck, helminth, ectoparasite, *Leucocytozoon sp.*



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Introduction

1.1 Study background

Pekin duck is a white color breed with a medium-sized deep yellow colored bill and curve neck; which walks in upright position (Howard, 1897). It can be rear for meat due to its large-size breed and also delicate flesh, and also as egg producer as it is an excellent layer (Howard, 1897). It was believed to be originated from the green-headed white Mallard, *Anas platyrhynchos* and domesticated around 2000 to 3000 years ago (Cherry and Morris, 2008). It is the best table and dominant breed which originated from China due to its high growth rate and low feed conversion ratio, compared to other breeds such as Khaki Campbell, Deshi and Muscovy type Moti ducks (Padhiet *al.*, 2011).

The housing sytem for duck production varies around the world due to difference in terrain, climate, market demand, economic development and others. Usually, either closed and open house free range systemdone in Asiausing all-in all-out system. Open house free range system is where the duck are free to roam in open water during the day, and housed during night time, while closed-house system give no access to open water at all (Cherry and Morris, 2008).

In a closed-house system, there are total confinement of the duck and improvement in disinfecting and cleaning of the house at the end of production period, before arriving of the next batch which helps in decreasing the prevalence and significance in helminths infection (Permin *et al.* 1999). While for open-house free rangesystem, the ducks are allow to roam freely on the ground and open water, thus have constant

contact with the earthworm which serves as intermediate host for certain helminths thus, exposing them to variety of helminthes with heavier infestation (Thamsborg *et al.* 1999)

1.2 Justification

- Diseases of parasitic infestation in poultry production often neglected as it rarely resulted in epidemics outbreak unlike other caused by viral and bacterial (Adenjinmi and Oke., 2011)
- Parasitic infestation can results in great production loss to the farmers and also to the industry thus need to be studied (Hoque*et al.*, 2014)
- The study of parasitic infestation of duck in Malaysia is not widely done as compared to the chicken industry, and due to increasing demand, this study able to help in improving the production

1.3 Study objectives

- To compare the prevalance of gastrointestinal helminthiasis, ectoparasites infestation and *Leucocytozoon sp.* infection of duck in closed house system and open house free range system.
- To identify common lice, mites and *Leucocytozoon sp.* infesting the duck in closed house system and open house free range system.

1.4 Hypotheses

- The prevalence of parasitic infestation of ducks in free range system is higher compared to closed house system.
- There will be infestation of *Menopon* sp. And *Ornithonyssus* sp.; and *Leucocytozoon simondi* infection.



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