



UNIVERSITI PUTRA MALAYSIA

***EFFECTS OF REPRODUCTIVE STAGES ON THE PREVALENCE
OF THE NORMAL FLORA IN THE DOE***

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**EFFECTS OF REPRODUCTIVE STAGES ON THE PREVALENCE
OF THE NORMAL FLORA IN THE DOE**

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CERTIFICATION

It is hereby certified that we have read this project paper entitled “Effects of the Reproductive Stages on the Prevalence of the Normal Flora in the Doe”, by Norazmanita Edayu bt Ajaman 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
– Project

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*Specially dedicated to my beloved
parents and friends*



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ABSTRACT

Abstract of the project paper presented to the Faculty of Veterinary Medicine in partial requirement for the course VPD 4999 – Project

**EFFECTS OF THE REPRODUCTIVE STAGES ON THE
PREVALENCE OF THE VAGINAL NORMAL FLORA IN THE****DOE****By****Norazmanita Edayu Bt Ajaman****2016****Supervisor: Dr. Intan Shameha binti Abdul Razak****Co-supervisor:****Dr. Hasliza Abu Hassim****Assoc. Prof. Dr. Siti Khairani Bejo**

The genital tract of animals is known to harbour non-specific bacteria known as "normal flora" but under certain circumstances they can be opportunistic pathogen. Generally, variety of bacteria have been isolated but their role and mechanism are not well understood. This study was designed to determine the prevalence of normal bacteria in the vaginal of pregnant and non-pregnant doe with the aims to isolate and identify those bacteria and relate with the different stages of reproduction. For this purpose, a number of fourteen sterile vaginal swabs were collected from 2 groups of doe; non-

pregnant and pregnant doe ($n = 7$). The swabs were cultured and incubated for 24h and morphology of the colonies were recorded. Subculture was done to obtain the pure colonies. Gram staining was performed followed by biochemical test accordingly. Bacteria isolated from the vagina of the pregnant group showed higher percentage (55.6%) than non-pregnant group (44.4%). The most dominant bacteria belong to the *Stapylococci* (58.33%) followed by *Streptococci* and *Enterococcus* (8.33%) and other species were isolated at relatively lower rates in both groups. This study showed that hormonal changes during different stages of reproduction had effect on the vaginal bacterial population.

Keywords: *pregnant, non-pregnant, vagina, normal bacterial flora, sterile vaginal swabs, doe*

ABSTRAK

Abstrak daripada kertas projek yang dikemukakan kepada Fakulti Perubatan Veterinar sebagai memenuhi sebahagian daripada keperluan kursus VPD 4901-Projek.

KESAN PERINGKAT PEMBIAKAN KEATAS PREVALENS FLORA NORMAL VAGINA BAGI KAMBING BETINA

Oleh

Norazmanita Edayu Bt Ajaman

2016

Penyelia: Dr. Intan Shameha binti Abdul Razak

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Saluran peranakan haiwan merupakan kawasan pembiakan bakteria yang tidak spesifik yang dikenali sebagai flora normal tetapi dalam keadaan tertentu bakteria ini boleh menjadi patogen oportunistik. Secara umumnya, pelbagai bakteria telah dipencilkan tetapi peranan dan mekanisme mereka tidak difahami dengan baik. Kajian ini bertujuan untuk menentukan prevalens bakteria normal dalam vagina kambing betina yang hamil dan yang tidak hamil dengan tujuan untuk mengasingkan dan mengenal pasti bakteria yang berkaitan dengan pelbagai peringkat pembiakan. Untuk tujuan ini, empat belas swab vagina steril dikumpulkan dari 2 kumpulan kambing betina; kambing betina tidak hamil dan hamil ($n = 7$). Sampel dikulturkan dan diinkubasi selama 24 jam dan morfologi

koloni telah direkodkan. Subkultur telah dilakukan untuk memperoleh koloni tunggal dan seragam. Gram pewarnaan dilakukan diikuti oleh ujian biokimia. Bakteria diasingkan daripada faraj kumpulan kambing hamil menunjukkan peratusan yang lebih tinggi (55.6%) daripada kumpulan yang tidak hamil (44.4%). Bakteria paling dominan tergolong dalam *Staphylococci* (58.33%) diikuti oleh *Streptococci* dan *Enterococcus* (8.33%) dan spesies lain telah diasingkan pada kadar yang lebih rendah dalam kedua-dua kumpulan. Kajian ini menunjukkan bahawa perubahan hormon semasa peringkat pembiakan mempunyai kesan ke atas populasi bakteria vagina

1.0 INTRODUCTION

Mucosal sites inhabited by commensal flora need to be capable of discriminating between commensals and the pathogenic organisms they encounter in order to generate protective immune responses (Gary, 2006). The lower female reproductive tract is one such site.

Hormones play a very important role in regulating host immunity in the genital tract, distinguishing this from other mucosal sites, notably oestrogen, progesterone and PGE2. Fluctuations in hormone levels during the reproductive cycle and pregnancy influencing immune surveillance and disease susceptibility (Gary *et al.*, 2006). Thus, the importance of studying such commensals flora is related to disease caused by them due to reduction of the immunity of the reproductive system (Al-Dahash and Fathall, 2000).

Considering these, the study was designed to assess the presence of normal bacteria in the vaginal environment of pregnant compared to non-pregnant doe with the aims to isolate and identify bacteria those are related with the different stages of reproduction and to determine the dominant and predominant groups capable of colonizing the vagina. Hence, the objectives are:

- i. To assess the presence and percentages of normal bacteria in the vaginal environment of pregnant compared to non-pregnant doe.
- ii. To isolate and identify the types of normal bacteria presence in the vagina of non-pregnant and pregnant doe.
- iii. To identify different types of isolated bacteria from the vagina of non-pregnant and pregnant does.

For this research, the following hypotheses were proposed:

- i. There will be higher number of the vaginal normal flora isolate from the non pregnant compared to the pregnant doe.
- ii. There will be more types of bacteria isolated from the vagina of non-pregnant than the pregnant doe



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