UNIVERSITI PUTRA MALAYSIA

COMPARISON OF MILK YIELD, SELECTED REPRODUCTIVE PERFORMANCE AND HEALTH PROBLEMS BETWEEN A DAIRY FARM ON CONCRETE AND ANOTHER ON RUBBER MAT FLOORING

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FPV 2015 52

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A project paper 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 "Comparison Of Milk Yield, Selected Reproductive Performance And Health Problems Between A Dairy Farm On Concrete And Another On Rubber Mat Flooring", by Nur Diyana Binti Mohamad Tahir 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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Acknowledgement

I would like to acknowledge first and foremost my supervisor, Dr. Siti Zubaidah Ramanoon for her knowledge and guidance, her patience and time throughout the completion of the project.

Thank you to my co-supervisor Dr. Nurhusein for his advice and knowledge which had helped me throughout the preparation of this project.

I would also like to acknowledge the staff at Large Animal Ward of the faculty for their technical support, logistics and help with the overall running of the project.

Thank you to the two farmers for their cooperation and welcoming us into their farm to get our data and conducting our project.

Thank you to my mother for being my strong hold and the one who had always supported me and encouraging me with endless love and care. Also to my brothers who had always understand me and giving limitless support. To my late father, whom had always supported me from the very beginning and believed that I am always a special person set for remarkable things in my life.

Lastly, thank you to my friends Faizal, Deva, Akmal, Izy and Piya, and the class of 2015 for sharing this sweet journey and making this a fulfilling and unforgettable one.

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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.

PERBANDINGAN HASIL SUSU, PRESTASI PEMBIAKAN TERPILIH DAN MASALAH KESIHATAN DI ANTARA LADANG LEMBU TENUSU BERLANTAI KONKRIT DAN LADANG BERLANTAI ALAS GETAH

Oleh

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2015

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Objektif kajian ini adalah untuk membandingkan hasil susu, prestasi pembiakan dan kesihatan lembu tenusu di antara ladang berlantai alas getah (RF) dan lantai konkrit (CF). Dua buah Ladang Angkat Universiti Putra Malaysia telah dipilih: RF yang terletak di Lenggeng, Negeri Sembilan dan CF di Kajang, Selangor. Tiga puluh ekor lembu berlaktasi dari setiap ladang telah dipilih dan hasil susu telah direkodkan selama sembilan hari berturut-turut. Penternak telah ditemuduga untuk mendapatkan maklumat ladang berkenaan prestasi pembiakan dan masalah kesihatan. Mastitis klinikal telah ditaksir berdasarkan keabnormalan ambing dan susu manakala ketempangan ditaksir menggunakan skor lokomosi. Keputusan analisis menunjukkan

purata hasil susu setiap hari pada lembu tenusu dari RF adalah 18.01 liter (sisihan piawaian, SD=1.5) dan 8.3 liter (SD= 1.4) pada lembu tenusu dari CF, yang mana perbezaannya adalah signifikan (nilai-t=77.8, $p<0.05$). Prestasi pembiakan terpilih untuk kedua-dua ladang adalah sama ($p>0.05$). Prevalens ketempangan ladang RF adalah signifikan lebih rendah ($\chi^2=18.4$, $p<0.05$), begitu juga dengan mastitis klinikal (ujian tepat Fisher, $p<0.05$), berbanding ladang CF. Kajian ini umumnya mencadangkan bahawa lembu tenusu yang diternak di ladang RF mungkin berprestasi lebih baik berbanding lembu tenusu di ladang CF.

Kata kunci: lembu tenusu, getah, hasil susu, prestasi pembiakan, ketempangan, mastitis

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.

COMPARISON OF MILK YIELD, SELECTED REPRODUCTIVE PERFORMANCE AND HEALTH PROBLEMS BETWEEN A DAIRY FARM ON CONCRETE AND ANOTHER ON RUBBER MAT FLOORING

By

Nur Diyana Binti Mohamad Tahir

2015

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The objective of this study was to compare the milk yield, reproductive performance and health of dairy cows between a farm with rubber mat flooring (RF) and a farm with concrete flooring (CF). Two 'Ladang Angkat' Universiti Putra Malaysia farms were selected: RF farm is located in Lenggeng, Negeri Sembilan and the CF farm is in Kajang, Selangor. Thirty lactating cows from each farm were selected and the milk yield was recorded for nine days consecutively. Farmers were interviewed for farm information on reproductive performance and health problems. Clinical mastitis was assessed based on udder and milk abnormalities and lameness by locomotion score. The results revealed that the average daily milk yield of cows from RF farm

was 18.01 litres (standard deviation, SD=1.5) and cows from CF farm was 8.3 litres (SD=1.4), of which the difference average milk yield was statistically significant (t-value=77.8, df=538, $p<0.05$). The selected clinical reproductive problems for both farms were similar ($p>0.05$). Farm on RF had significantly lower prevalence of clinical mastitis (Fisher's exact test, $p<0.05$) and lameness ($\chi^2=18.4$, $p<0.05$), compared to CF farm. This study generally suggests that dairy cows kept on RF farm may perform better compared to cows from CF farm.

Keywords: Dairy cows, rubber, milk yield, reproductive performance, lameness, mastitis

1.0 INTRODUCTION

Concrete flooring (CF) is the most common type of floor for confined dairy herds because it is easy to construct and easy to clean (Telezhenko *et al*., 2007). According to Gooch (2013), flooring system employed in a dairy farm is one of the aspects of housing that may cause excessive stress on cow's feet and legs due to the nature of the floor surface (i.e. either too rough or too smooth). In a study by the United States Department of Agriculture (USDA) from 1991 to 2007, the three most important diseases or conditions in dairy cattle identified by producers are clinical mastitis (16.5%), lameness (14.0%) and infertility (12.9%) and the two most important traits that determine the value of a cow and affect a farmer's decision on culling are the fertility and milk yield (Kremer *et al*., 2012) while the reproductive health problems causes economic loss to dairy industry (Kremer *et al*., 2007).

Currently, rubber flooring (RF) system as an alternative to the traditional CF has been used by some farms in Malaysia. Therefore, research is needed to determine the effect of RF on the production and reproduction of dairy cows in local settings.

This study aims to compare the milk yield, selected reproductive performance indicators (i.e. age at first calving, pregnancy rate, calving interval, days open and number of parity) and health problems such as clinical reproductive problems (i.e. dystocia, abortion, retained placenta and repeat breeders), clinical mastitis and lameness, between cows under CF and RF systems.

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