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EVALUATION OF MILK PRODUCTION IN MURRAH BUFFALO COWS UNDER DIFFERENT FARM MANAGEMENT SYSTEM

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EVALUATION OF MILK PRODUCTION IN MURRAH BUFFALO COWS UNDER DIFFERENT FARM MANAGEMENT SYSTEM

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A project paper submitted to
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It is hereby certified that we have read this project paper entitled "Evaluation of milk production in murrah buffalo cows under different farm management system", by Nur Syahirah bt Zainuddin 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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ABSTRAK

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

PENILAIAN PENGELUARAN SUSU LEMBU KERBAU MURRAH DI BAWAH SISTEM PENGURUSAN LADANG YANG BERBEZA

Oleh

Nur Syahirah Zainuddin

2017

Penyelia: Dr.Nurhusien Yimer Degu

Penyelia bersama: Professor Dr.Abd Wahid Haron

Kajian ini bertujuan untuk membandingkan hasil susu lembu kerbau yang diternak di bawah pengurusan yang baik (GM) dan di bawah pengurusan yang kurang baik (PM). Pengurusan ladang ini telah dinilai mengikut garis panduan standard pengurusan cekap pengeluaran kerbau tenusu (Thomas, 2008). Sejumlah lima (5) buah 'Ladang Angkat' Universiti Putra Malaysia telah dipilih: GM ladang terletak di Mukim Ulu Melaka, Langkawi dan Sungai Tangkas, Kajang manakala ladang-ladang PM terletak di Kuah Langkawi, Taman Sri Jelok Kajang dan Sungai Batangsi Semenyih. Sejumlah 30 dan 49 haiwan telah dipilih dari

ladang PM dan GM masing-masing dan jumlah hasil susu ke seluruh ladang telah direkod selama 3 hingga 5 hari berturut-turut. Rekod data lepas sehingga 3 bulan (sejak November 2016) juga diambil dari setiap ladang untuk menilai konsistensi hasil susu. Petani telah ditemuduga untuk mendapatkan maklumat berkaitan ladang mengenai prestasi reproduktif dan masalah kesihatan. Mastitis klinikal telah dinilai berdasarkan pemeriksaan kantung susu dan keabnormalan susu. Keputusan mendapati bahawa purata hasil susu harian lembu dari ladang GM 6.319 liter (sisihan piawai, SD = 1.2) dan dari ladang PM 4.421 liter (SD = 2.4), di mana hasil susu purata perbezaan adalah signifikan secara statistik (nilai t = 7.908, df = 229, $p < 0.05$). Masalah pembiakan klinikal telah dikenal pasti bagi kedua-dua ladang dan ianya didapati sama rata ($p > 0.05$). Kajian ini secara umumnya menunjukkan bahawa kerbau tenusu di ladang GM boleh mengeluarkan susu lebih baik berbanding dengan kerbau tenusu dari ladang PM.

Kata kunci: kerbau tenusu, hasil susu, prestasi pembiakan, 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.

EVALUATION OF MILK PRODUCTION IN MURRAH BUFFALO COWS UNDER DIFFERENT FARM MANAGEMENT SYSTEM

By

Nur Syahirah Zainuddin

2017

Supervisor: Dr.NurhusienYimer Degu

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This aim of this study is to compare the milk yield of buffalo cows kept under good management (GM) practice and poor management (PM) practice. The management of the farm were assessed according to standard management guidelines for efficient dairy buffalo production (Thomas, 2008). A number of five (5) 'Ladang Angkat' Universiti Putra Malaysia farms were selected: GM farms were located in Mukim Ulu Melaka, Langkawi and Sungai Tangkas, Kajang whereas the PM farms were in Kuah Langkawi, Taman Sri Jelok Kajang and Sungai Batangsi Semenyih. A total number of 30 and 49 animals were selected from PM and GM farms respectively and the milk yield for the entire farm were recorded for 3 to 5 days

consecutively. Past records data of up to 3 months (since November 2016) were also taken from every farm to evaluate the consistency of milk yield. Farmers were interviewed for farm information on reproductive performance and health problems. Clinical mastitis was assessed based on udder and milk abnormalities. The results revealed that the average daily milk yield of cows from GM farm was 6.319 litres (standard deviation, SD=1.2) and cows from PM farm was 4.421 litres (SD=2.4), of which the difference average milk yield was statistically significant (t-value=7.908,df=229,$p<0.05$). The identified clinical reproductive problems for both farms were similar ($p>0.05$). This study generally suggests that buffalo cows in GM farm may perform better compared to cows from PM farm.

Keywords: Dairy buffalo, milk yield, reproductive performance, mastitis

1.0 INTRODUCTION

World milk production has doubled since the last few decades and in the last few years, it is noticeable that buffalo have supplied about 12% of the total world milk production (FAO, 2004).A study was carried out to evaluate the milk production in murrah buffalo cows under different farm management system; good management and poor management system. The guidelines of the farm management system are based on DeLaval (2008) and Nur Diyana (2015). Murrah buffalo is a domesticated Indian buffalo that can be found throughout Asia, India, Pakistan, Bulgaria, Mediterranian, Caucasia, Egypt and Nepal. Mostly, Murrah breed and Murrah cross breed are the chosen river type buffalo for milk production purpose in a farm. The adult male body weight is 450 – 800 kg while adult female weight is 350 – 700 kg (Smith, 1928). The average lactation duration of Murrah cow is 305 days with milk yield of 1800kg/lactation (FAO, 2005). Combination of various aspects of dairy buffalo management together for instance on nutrition, breeding, milking and improved housing, overall has been known to produce outstanding improvements in buffalo productivity (Sastry and Tripathi, 1988). Better animal welfare will be reflected in the normal behavioral activities and milk production.

However, according to Wahid (2011), due to limitations of feed resources, it is quite challenging to provide good feed and feeding as a requirement of buffalo husbandry. But with an improved management and proper breeding, the milk yield of a buffalo cow can be improved from 1500 to 5000 litre per lactation. Due to the fact that buffalo are more sensitive

to heat or surrounding temperature than cattle and the fact that buffalo has lower body temperature than cattle (38˚ and 38.6 ˚ respectively), thus the tendency for buffaloes to become heat stress is higher (ASPAC, 1975). Buffalo will seek water to immerse its body as a means of reducing the heat load (Mahadevan, 1992). Heat causes stress that lead to malnutrition due to lack of eating thus will overall decrease the milk yield. Thus, countering the heat problem is very crucial in a dairy buffalo management system in order to obtain higher milk yield.

This study aimed to compare the milk yield, selected reproductive performance indicators (i.e. age at first calving, calving interval and number of parity) and health problems such as clinical reproductive problems (i.e. prolapse, abortion, dystocia and repeat breeders) and clinical mastitis of buffalo cows kept under good management practice and poor management practice.

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