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EVALUATION OF UDDER HEALTH AND BODY CONDITION SCORE IN SAANEN AND SHAMI-JAMNAPARI CROSSBRED

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BY

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A project report submitted to Faculty of Agriculture, Universiti Putra Malaysia, in fulfillment of the requirement of SHW 4999 (Final Year Project) for the award of the degree of Bachelor of Agriculture (Animal Science)

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CERTIFICATION

This project entitled 'Evaluation of Udder Health and Body Condition Score in Saanen and Shami-Jamnapari Crossbred' is prepared by Norfadhilah bt Che Mat and submitted to the Faculty of Agriculture in fulfilment of the requirement of SHW 4999 (Final Year Project) for the award of the degree of Bachelor of Agriculture (Animal Science).

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LIST OF ABBREVIATIONS

UW	Udder Width
UC	Udder Circumference
UD_RE	Udder depth rear
UD_S	Udder depth side
TW_RT	Teat width right
TW_L	Teat width left
TL_RT	Teat length right
TL_L	Teat length left
TC_RT	Teat circumference right
TC_L	Teat circumference left
DBT	Distance between teats
BCS	Body condition score
LN	Lactation number

EVALUATION OF UDDER HEALTH AND BODY CONDITION SCORE IN SAANEN AND SHAMI-JAMNAPARI CROSSBRED

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ABSTRACT

Morphological of udder and body condition score are very critical in dairy animals as they could be a factor that cause the production of milk decreased. This study was conducted to evaluate the udder conformation and the body condition score of lactating Saanen and Shami-Jamnapari crossbreds does in one dairy goat farm. In addition, the study also evaluated the changes in the conformation traits of the udder and the body conformation score for the two breed types at different lactation stages.

A total of 20 does from two breed types of lactating goats were used as the experimental material in the study, namely 10 Saanen goats and 10 Shami-Jamnapari crossbreds. The study has been conducted at Gmilk Farm in Nilai, Negeri Sembilan. Udder health is assessed by using conformation traits of the udder and the teats, as well as structural abnormality and asymmetry. Udder was evaluated by observation using back and side views. The morphology traits measured were udder depth (UD), udder circumference (UC), udder width (UW), teat length (TL), teat width (TW), teat circumference (TC), and distance between teats (DBT). Body condition scoring is done by manual palpation around the vertebrae in the lumbar and sternal regions. A score on the scale of 1 - 5 are assigned to each animal. The measurement and scoring is done two hours before evening milking session.

The result indicated that there was no interaction between breed and lactation number for udder and teat measurement traits. There were generally no significant differences ($P>0.05$) in udder and teat measurement traits between primiparous and multiparous does. However, there were significant differences ($P<0.05$) in udder width and udder circumference between the breeds during all four time of lactation studied. In addition, during the third and fourth visit there was significant difference ($P<0.05$) between breeds for udder depth as well. There was no significant differences in body condition score (BCS) between the two breeds except for the fourth visit. It was concluded that the BCS between lactating Saanen and Shami-Jamnapari in the farm were similar. However, the morphology of the udder between the two breeds were different. The lactation number had no effect on the udder morphology.

PENILAIAN KESIHATAN AMBING DAN SKOR KEADAAN BADAN KACUKAN SHAMI-JAMNAPARI DAN SAANEN

Oleh

Norfadhilah Binti Che Mat

ABSTRAK

Morfologi ambing dan skor keadaan badan adalah sangat kritikal bagi haiwan tenusu kerana mereka boleh menjadi faktor yang menyebabkan pengeluaran susu berkurangan. Kajian ini dijalankan untuk menilai bentuk ambing dan skor keadaan badan Saanen dan kacukan Shami-Jamnapari yang menyusu dalam sebuah ladang tenusu kambing. Di samping itu, kajian ini juga menilai perubahan dalam sifat bentuk ambing dan skor keadaan badan bagi kedua-dua jenis baka di peringkat laktasi yang berbeza.

Sebanyak 20 kambing betina yang menyusu daripada dua jenis baka kambing telah digunakan sebagai bahan kajian, iaitu 10 ekor kambing Saanen dan 10 kacukan Shami-Jamnapari. Kajian ini telah dijalankan di Gmilk Farm di Nilai, Negeri Sembilan. Kesihatan ambing dinilai dengan menggunakan ciri bentuk ambing dan puting dan juga keabnormalan struktur dan asimetri. Ambing dinilai menggunakan pemandangan dari belakang dan sisi. Ciri morfologi yang diukur ialah kedalaman ambing (UD), lilitan ambing (UC), lebar ambing (UW), panjang puting (TL), lebar puting (TW) lilitan puting (TC), dan jarak antara puting (DBT). Permarkahan skor keadaan badan dilakukan dengan rabaan manual sekitar vertebra kawasan lumbar dan sternal. Skor pada skala 1-

5 diberikan untuk setiap haiwan. Pemarkahan dilakukan dua jam sebelum pemerahan susu sesi petang.

Keputusan menunjukkan bahawa tidak ada interaksi antara baka dan nombor laktasi terhadap sifat pengukuran ambing dan puting. Secara umum tiada perbezaan yang signifikan ($P>0.05$) bagi sifat pengukuran ambing dan puting antara kambing betina *primiparous* dan *multiparous.* Walau bagaimanapun, terdapat perbezaan yang signifikan ($P<0.05$) bagi lebar dan lilitan ambing antara baka semasa semua empat peringkat laktasi yang dikaji. Tambahannya, pada lawatan ketiga dan keempat terdapat perbezaan yang signifikan ($P<0.05$) antara baka bagi kedalaman ambing. Tiada perbezaan yang signifikan ($P>0.05$) dalam keadaan skor badan (BCS) antara kedua-dua baka kecuali pada lawatan keempat. Kesimpulannya BCS antara kambing menyusu Saanen dan Shami-Jamnapari di ladang tersebut adalah hampir sama. Walau bagaimanapun, morfologi ambing antara kedua-dua baka adalah berbeza. Peringkat laktasi tidak memberi kesan terhadap morfologi ambing.

CHAPTER 1

INTRODUCTION

1.1 Research Background

In Malaysia, dairy goat production is a very minor entity in the livestock sector and there is no local dairy goat breed. Dairy goat farming started in 1950 using imported breeds such as Saanen, Anglo Nubian, British Alpine and Jamnapari. In 2009, dual purpose Shami goats from Cyprus were introduced and it became an alternative to Saanen which had become the popular dairy goat breeds in Malaysia. The breed was imported to Malaysia as it is considered to be one of the best dual-purpose breeds of the Middle East under semi-intensive or intensive production systems and high prolificacy with high milk production. Currently, the farmers had crossed Shami with Jamnapari in order to increase milk production. Conformation traits of the udder could be a factor that cause the production of milk decreased. Conformation traits are of concern to most animal breeders. This is not only as a descriptive traits, but also because of their influences on the production and also profitability. Commonly, the traits that inspected are udder and teat type traits, primarily due to their influence on the ability of milking, the udder health and also the longevity of animals (Mclaren *et al*., 2016). Other than conformation traits of udder, routine program for body condition scoring could also help detect potential health problems before they considerably reduce milk production. A herd of goat which is in good body condition would not only produce more, but also be less predisposed to metabolic disorders, diseases, mastitis and reproductive problems (Koyuncu and Altınçekiç, 2013). In addition, in the Malaysian dairy goat sector nowadays, Shami crosses and especially Saanen are the potential dairy goat breeds.

1.2 Research Problem

It is important to understand and monitor the health status of the breeds in the local environment is important in order to improve the milk production. In addition, there are no published works on the body condition score (BCS) and udder health inspection associated with milk production in Saanen and Shami-Jamnapri crossbreds.

1.3 Research Hypothesis

BCS and udder health inspection are the important factors that reflect the health of a goat and also their milk quantity and quality. Low milk production is often associated with lower BCS and poor udder health (Meyers-Raybon, 2010). Other than that, it is expect that the udder morphology are different between the breeds.

1.4 Objectives

1.4.1 General Objective

This study was conducted to evaluate the udder conformation and the body condition score in lactating Saanen and Shami-Jamnapari crossbred does.

1.4.2 Specific Objectives

The specific objectives of the study were:

i) To determine the conformation of the udder and the teats in lactating Saneen and Shami-Jamnapari does.

ii) To determine the body conformation scores of these two breed types.

iii) To evaluate the changes in the conformation traits of the udder and the body conformation score of the two breed types at different lactation stages.

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