



UNIVERSITI PUTRA MALAYSIA

**SURVEY OF FEEDING PRACTICES AND SUPPLEMENT USE AMONG A
SUBPOPULATION OF HORSES IN SELANGOR, KUALA LUMPUR AND
PUTRAJAYA**

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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 SHW4999 (Final Year Project) for the award of the degree of Bachelor of Agriculture (Animal Science)

Faculty of Agriculture

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CERTIFICATION FORM

This project report entitled “**SURVEY OF FEEDING PRACTICES AND SUPPLEMENT USE AMONG A SUBPOPULATION OF HORSES IN SELANGOR, KUALA LUMPUR AND PUTRAJAYA**” is prepared by **Nur Syamini binti Mohamad Zulkifli Manisegaran** and submitted to the Faculty of Agriculture 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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LIST OF ABBREVIATIONS

Mcal	-	megacalories
g	-	gram
IU	-	International Unit
mg	-	megagram
kg	-	kilogram
PKE	-	Palm kernel extract
CFC	-	Creative Formulation Concepts
NRC	-	National Research Council

ABSTRACT

SURVEY OF FEEDING PRACTICES AND SUPPLEMENT USE AMONG A SUBPOPULATION OF HORSES IN SELANGOR, KUALA LUMPUR AND PUTRAJAYA

NAME: NUR SYAMINI BT MOHD ZULKIFLI MANISEGARAN (175256)

SUPERVISOR: DR. HENNY AKIT

Horses require a well-balanced diet which includes all essential nutrients, such as carbohydrates, proteins, fats, vitamins and minerals. Several factors such as age, breed, weight, sex, category of exercise and life stage of the horse need to be taken into account when formulating horse feed. The right feeding practices that meet the energy and nutrition requirements of horses may reduce the possibility of occurrence of nutritional-related diseases and reduced performance.

The objective of this study was to study the feeding practices and supplement use among a subpopulation of horses in Selangor, Kuala Lumpur, and Putrajaya. The study was carried out (i) to identify the supplement use in the diet of horses in Selangor, Kuala Lumpur, and Putrajaya, and (ii) to determine whether the feeding practices meet the energy and nutrition requirements of the horses. A total of 133 horses from six stables around Selangor, Kuala Lumpur, and Putrajaya were selected. The necessary data obtained through the survey was incorporated into the software,

CFC Horse Ration Formulation System to calculate the energy and nutrient requirements.

The results showed that the digestible energy, crude protein, and lysine were insufficient for most of the stables. Besides that, most horses in most stables had acceptable calcium to phosphorus ratio in their diet. Majority of the stables used supplements in feeding the horses. However, certain use vitamins and minerals were given in excess or insufficient.

Keyword: Horse, nutrition, energy, supplements



ABSTRAK

KAJI SELIDIK MENGENAI AMALAN PEMAKANAN DAN PENGUNAAN MAKANAN TAMBAHAN DI KALANGAN SUBPOPULASI KUDA DI SELANGOR, KUALA LUMPUR DAN PUTRAJAYA

NAMA: NUR SYAMINI BT MOHD ZULKIFLI MANISEGARAN (175256)

PENYELIA: DR. HENNY AKIT

Kuda memerlukan diet seimbang yang merangkumi kesemua nutrien penting, seperti karbohidrat, protein, lemak, vitamin dan mineral. Beberapa faktor seperti umur, baka, berat badan, jantina, kategori senaman, dan peringkat kehidupan kuda perlu diambil kira apabila merumuskan makanan kuda. Amalan pemakanan yang betul serta memenuhi keperluan tenaga dan nutrisi kuda boleh mengurangkan kemungkinan berlakunya penyakit berkaitan pemakanan dan pengurangan prestasi.

Objektif kajian ini adalah untuk mengkaji amalan pemakanan dan penggunaan makanan tambahan di kalangan subpopulasi kuda di Selangor, Kuala Lumpur dan Putrajaya. Kajian ini telah dijalankan (i) untuk mengenal pasti penggunaan makanan tambahan di dalam diet kuda di Selangor, Kuala Lumpur dan Putrajaya, dan (ii) untuk menentukan sama ada amalan pemakanan tersebut memenuhi keperluan tenaga dan nutrisi kuda. Sebanyak 133 ekor kuda dari enam kandang kuda di sekitar Selangor, Kuala Lumpur dan Putrajaya telah dipilih. Data yang diperlukan diperolehi melalui

kaji selidik tersebut telah dimasukkan ke dalam perisian, 'CFC Horse Ration Formulation System' untuk mengira keperluan tenaga dan nutrien.

Hasil kajian menunjukkan bahawa tenaga yang mudah dicerna, protein mentah, dan lisin adalah tidak mencukupi bagi kebanyakan kandang. Selain itu, sebahagian besar kuda di dalam kebanyakan kandang mempunyai nisbah kalsium dan fosforus yang boleh diterima di dalam diet mereka. Majoriti kandang menggunakan makanan tambahan dalam pemberian makan kuda. Walaubagaimanapun, penggunaan vitamin dan mineral tertentu diberi berlebihan atau tidak mencukupi.

Kata kunci: Kuda, pemakanan, tenaga, makanan tambahan

CHAPTER ONE

INTRODUCTION

The equine industry has become a very important part of the agricultural scene throughout the world. From being a free ranging feral animal, the horse has been used for farming and further for racing and other equine sports (Hilmo & Van Doorn, 2013). It continues to grow in popularity and horses are increasingly intensively managed by stables around Malaysia. There is great pressure to improve performance, especially in advanced levels, and nutrition plays an important role in maximizing performance (Verhaar, 2010). Nutrition is a key component of equine health and performance (Hurtes, 2009).

A horse must have a balanced diet, which includes all the nutrients, such as water, energy, protein, vitamins, and minerals, in the proper proportion and total amount. Horses need different levels of energy and nutrition in their diet depending on their age, breed, weight, sex, category of exercise and life stage of the horse. In horses, formulating a proper balanced ration is more difficult than for other species. This is because it must be developed from multiple components, and it must take into account the activity level, life stage of the animal, and individual variation, as in other species.

In horses, imbalanced diet can contribute to a number of disease conditions, such as colic, orthopaedic problems, and obesity (Hoffman et al., 2009). These nutritional related diseases would cause great complications not only to the horses but also the owners.

1.1 Research Problem

There is lack of information and research studies on feeding practices and supplement use of horses in Malaysia. Thus, it is of interest to investigate the feeding practices and supplement use for the horses in Malaysia.

1.2 Objectives of Study

General Objective:

To study the feeding practices and supplement use among a subpopulation of horses in Selangor, Kuala Lumpur, and Putrajaya.

Specific Objectives:

- i) To identify the supplement use in the diet of horses in Selangor, Kuala Lumpur, and Putrajaya.
- ii) To determine whether the feeding practices meet the energy and nutrition requirements of the horses.

1.3 Research Hypothesis

The right feeding practices that meet the energy and nutrition requirements of horses may reduce the possibility of occurrence of nutritional-related diseases and improve performance of horses.

1.4 Significance of Study

This study can provide guidelines on what can be done to optimize feeding practices and to maximize performance.

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