UNIVERSITI PUTRA MALAYSIA

INDIGOFERA LEAF MEAL (ILM) AS SUPPLEMENTS TO INCREASE EGG PRODUCTION AND QUALITY OF JAPANESE QUAILS

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INDIGOFERA LEAF MEAL (ILM) AS SUPPLEMENTS TO INCREASE EGG PRODUCTION AND QUALITY OF JAPANESE QUAILS

BY:

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CERTIFICATION FORM

This project entitle Indigofera Leaf Meal (ILM) as a supplements to increase egg production and quality of quail eggs is prepared by Siti Norain Binti Abdul Rahim and submitted to the faculty the Faculty of Agriculture in partial fulfillment or the requirement of SHW4999 for the award of the degree of Bachelor of Agriculture (Animal Science).

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Indigofera Leaf Meal (ILM) as Supplements to Increase Egg Production and Quality of the Japanase Quails (*Cortunix japonica*)

ABSTRACT

Quails egg is considered as a delicacy in many part of the world. Most consumer that concern about their health will take about 2-5 egg per day .The objective of this study was to determine the effect of supplementation of Indigofera leaf meal (ILM) on the production and quality of quail egg. One hundred and twelve ready to lay *Cortunix japonica* quails, 5 weeks of age, were used in this study. The birds were divided into four treatment groups with four replications with each replicate consisted of seven birds. There were four treatments, namely commercial diet supplemented with ILM at 0% (C0), 0.5 % (T1), 1.0 % (T2) and 1.5 % (T3), respectively. The experiment conducted at Ladang 2 and Nutrition laboratory, in department of Animal Science, University Putra Malaysia. The nutrients content of ILM were crude protein (28.98%), Ash 2.285%, crude fat 3.528%, and crude fibre 8.493%. The birds were allowed 2 week adjustment period followed by the dietary treatments for 4 weeks. Feed intake was determined on a weekly basis. Eggs were collected daily and were evaluated on weight, total production of egg, FCR, yolk index, thickness of shell, colour of yolk and Haugh Unit. Duration for the study is 6 weeks.The total egg production, the weight of the egg and feed conversion ratio were significantly different ($p<0.05$) among the treatment diets. For the egg quality result, it show that HU is significantly different p (<0.05), yolk index is not significantly different p(>0.05), thickness of the shell is significantly different, and colour also significantly different p(<0.05). In can be concluded that supplemented with the Indigofera leaf meal increased egg production and improved quality in Japanase quail (*Cortunix japonica*).

Daun Indigofera (ILM) Sebagai Penambahan Makanan Untuk Meningkatkan Pengeluaran Telur Dan Kualiti Burung Puyuh Japanese (*Cortunix japonica*)

ABSTRAK

Telur puyuh dikatakan sebagai deligasi diserata dunia. Kebanyakkan pengguna yang mengambil berat mengenai kesihatan akan mengambil sebanyak 2-5 biji sehari. Tujuan ujikaji ini di jalankan adalah untuk mengetahui kesan penambahan daun Indigofera dalam pengeluaran dan kualiti telur puyuh. Sebanyak seratus dua belas *cortunix japonica* ynag menanti untuk bertelur, berumur 5 minggu digunakan. Puyuh tersebut dibahagikan kepada empat rawatan dengan empat ulangan dan ulangan tersebut setiapnya mempunyai 7 ekor puyuh. Keempat-empat rawatan tersebut adalah makanan commercial yang ditambah dengan ILM pada % (C0), 0.5 % (T1), 1.0 % (T2) and 1.5 % (T3). Ujikaji dilakukan di Ladang 2 dan makmal pemakanan, Jabatan Sains Haiwan, Universiti Putra Malaysia. Kandungan nutrien dalam ILM ialah protein kasar (28.98%), abu 2.285%, lemak kasar 3.528% dan gentian kasar 8.493%. Puyuh diberi 2 minggu masa adaptasi diikuti oleh 4 minggu rawatan makanan. Telur dikutip setiap hari dan diuji untuk berat, jumlah pengeluaran telur, kadar pertukaran makanan (FCR), index kuning telur, ketebalan kulit, warna telur kuning dan Haugh unit. Masa yang diambil untuk ujikaji ini adalah 6 Minggu. Untuk jumlah pengeluaran telur, berat dan kadar pertukaran makanan mempunyai perbezaan yang nyata p(<0.05).Untuk kualiti telur, ia menunjukkan HU mempunyai perbezaan nyata p (<0.05), indek telur kuning tidak mempunyai perbezaan nyata p(>0.05), ketebalan kulit mempunyai perbezaan yang nyata p (<0.05), dan juga warna pada kuning telur mempunyai perbezaan yang nyata p (<0.05). Oleh itu, ia dapat disimpulkan bahawa penambahan daun Indigofera dapat meningkatkan pengeluaran telur dan meningkatkan kualiti pada puyuh.

CHAPTER 1

1.0 INTRODUCTION

Quails egg is considered as one of the delicacy in many part of the world. Many consumer consume about 2-5 egg per day are because of that the demand for quail egg is increasing 5-10% every year (Sharma, 2014). In quail production many factors can influences the egg production; include environmental and feeding management (FAO, 1994). Environmental factor included lighting, humidity, and also temperature.

The feeding management includes the quality of feedstuff to ensure the egg production is high. Commonly quail egg contains very high protein. The standard characteristics quail egg, the weight must within 10.3 g and the shell thickness of 0.19mm (Panda and Singh, 1990). This is because the size of quail egg is smaller compare to the chicken egg. Nowadays, the consumer really concern about their health. Although the size is small, but it serves nutritional value three to four greater is than chicken egg.

In Chinese medication, the quail eggs are used to treat tuberculosis, asthma and diabetes. (Living healthy, 2012).The feed consumed by the quail hen is used for maintenance and production of the egg. The quantity of the feed must be balance according to their needs because if the feed them very low, the production of egg will decrease. The protein content in feed for quail must high if not it will results in low egg weight and production.

RESEARCH HYPHOTHESIS

Diet supplemented with Indigofera will egg production improve the nutrient composition, and quality of Japanese quail.

1.1 MAIN OBJECTIVE

To determine the effect of dietary supplementation of Indigofera leaf meal (ILM) on the egg quality and composition of quail.

1.2 SPECIFIC OBJECTIVES

1. To determine the effect of ILM as supplements on egg production and quality of Japanese quail.
2. To determine the physical quality of quail eggs fed diets supplemented with ILM.

1.3 SIGNIFICANT OF STUDY

The cost of feed for quail is more than 70% of the total cost of operation. Indigofera has been shown to contain antibacterial properties, antioxidants and other essential nutrient. By supplementation with ILM it may improve feed efficiency, the egg production and the quality of the quail's egg. But for the long run, it will reduce the cost of feeding to the quails.

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