



**UNIVERSITI PUTRA MALAYSIA**

**A HERBAL PREPARATION FROM *Azadirachta indica* AS AN  
ALTERNATIVE TO CONVENTIONAL CONTROL AGAINST COCCIDIA IN  
VILLAGE CHICKENS**

**MOHD FAWWAZ YAACOB**

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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 report entitled A herbal preparation from *Azadirachta indica* as an alternative to conventional control against coccidia in village chickens is prepared by Mohd Fawwaz Bin Yaacob (174400) and submitted to the Faculty of Agriculture in fulfillment of requirement of SHW 4999 (Final Year Project) for the award of the degree of Bachelor of Agriculture (Animal Science).

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## ABSTRAK

Satu kajian telah dijalankan untuk mengenalpasti jumlah oosit koksidia dalam ayam kampung dan juga melihat prestasi berat ayam kampung. Secara amnya, tujuan utama kajian ini diadakan untuk mengenalpasti keberkesanan makanan tambahan daripada herba neem dalam menghindari penyakit koksidiosis. Secara khusus pula, kajian ini diadakan bertujuan mengenalpasti keberkesanan daun neem bagi mengatasi masalah koksidiosis dalam ayam kampung. Selain itu, ianya bagi bertujuan melihat kesan penggunaan daun neem dalam makanan ayam kampung terhadap tumbesaran berat ayam kampung. Jumlah ayam yang digunakan didalam kajian ini adalah sebanyak 27 ekor. Kajian ini dilakukan di Unit Poltri, Ladang 2 Universiti Putra Malaysia, Makmal Parasitologi, Fakulti Perubatan Veterinar, Universiti Putra Malaysia dan juga Makmal Analisa Makanan, Jabatan Sains Haiwan, Fakulti Pertanian, Universiti Putra Malaysia. Kajian ini menggunakan daun neem (*Azadirachta indica*), ayam kampung baka UPM dan juga ubat pengawal koksidia (coccidiostat). Tiga jenis rawatan digunakan dalam kajian ini. Rawatan pertama adalah makanan pembesaran ayam kampung yang bertindak sebagai rawatan kawalan. Rawatan kedua ialah makanan pembesaran ayam kampung dicampur dengan 10% daun neem manakala rawatan ketiga pula adalah makanan pembesaran ayam kampung dicampur dengan 1% ubat pengawal koksidia. Ayam kampung UPM yang berumur 8 minggu yang dipelihara secara lepas dipilih secara rawak kira-kira 4 minggu sebelum kajian dimulakan. Kemudian, ayam kampung tersebut ditempatkan di dalam sangkar secara rawak dan dilabelkan. Daun neem dikutip dan dikeringkan didalam oven selama 48 jam pada suhu 60°C dan dihancurkan kepada saiz yang lebih kecil. Kemudian ayam kampung tersebut diberi makan mengikut rawatan yang telah ditetapkan. Jumlah oosit koksidia dan berat ayam diambil seminggu sekali. Berdasarkan kajian tersebut, saya mendapati bahawa rawatan 1 mempunyai nilai oosit tertinggi berbanding rawatan 2 dan

rawatan 3. Walaubagaimanapun, rawatan 2 dan rawatan 3 adalah tidak signifikan antara satu sama lain. Rawatan 2 dan rawatan 3 mempunyai jumlah penurunan oosit koksidia yang paling pantas berbanding rawatan 1 yang menunjukkan sedikit perlahan penurunannya. Walaupun rawatan 1 menunjukkan penurunan tetapi jumlah oosit yang masih ada dalam ayam kampung tersebut masih menunjukkan dalam kandungan yang tinggi. Bagi berat ayam pula, ia menunjukkan tiada signifikan antara kesemua rawatan. Walaubagaimanapun, rawatan 2 dan rawatan 3 menunjukkan jumlah peningkatan yang lebih baik berbanding rawatan 1. Hal ini kerana jumlah koksidia yang berada di dalam ayam kampung tersebut adalah pada kadar yang minimum. Namun begitu, berat ayam pada rawatan pertama masih mampu untuk meningkat dengan baiknya. Hal ini menunjukkan baka ayam kampung baka UPM dapat melawan koksidia kerana mempunyai daya tahan yang baik tanpa menunjukkan sebarang tanda seperti ayam berak berdarah. Jadi menerusi kajian ini, jelaslah bahawa daun neem mempunyai kesan anti-koksidia dan dapat menggantikan ubat pengawal koksidia dimana harganya jauh lebih tinggi berbanding herba daun neem.

## ABSTRACT

A study was conducted to evaluate the number of oocytes in village chicken and body weight of the village chicken. In general, the experiment was carried out to determine the effectiveness of dietary inclusion of Neem leaves in prevention of coccidiosis. The specific objectives were to determine the effectiveness of dietary inclusion of Neem leaves in prevention of coccidiosis in village chicken, and to study the effect of dietary Neem leaves on the growth performance of village chicken. The total number of the chicken were used to calculate the number of oocytes and body weight of the chicken were 27 chickens. This experiment was conducted at Unit Poltri, Ladang 2, Universiti Putra Malaysia, parasitology laboratory, Faculty of Veterinary Medicine, Universiti Putra Malaysia and Nutritional Laboratory, Department of Animal Science, Faculty of Agriculture, Universiti Putra Malaysia. The experimental unit were *Azadirachta indica* (Neem leaves), *Gallus gallus domesticus* (UPM village chicken) and coccidiostat (AM-COCC, Vetpharm Lab(S) Pte Ltd). There were three treatment in this study. The first treatment was the village chicken grower diet (control diet). Second treatment is the control diet with Neem leaves at 10% level and the last treatment was control diet with 1% of coccidiostat. The design of this experiment was Complete Randomized Design. There were three treatments as mentioned above. The UPM village chicken were selected from a flock aged 8 weeks that have been raised under free range system for about 4 weeks before commencement of the experiment. The chicken then were placed randomly into the broiler cages. The Neem leaves was collected, dried in the oven for 48 hours at 60°C and then ground and mixed with the grower feed. The chicken were fed according to the treatment. The faecal samples (oocyte counts) and bodyweight were take on weekly basis. From the experiment, it was found that treatment 1 had significantly higher oocyte counts than treatment 2 and treatment 3. However, between treatment 2 and 3 were not significant. The number of

oocytes in treatment 2 and 3 rapidly decrease until below the critical level of 300 OPG that can result in coccidial infection. Treatment 1 shows decrease in the number of oocytes but still remain at infective level. For the body weight of the village chicken, it was found that there were no significant differences in bodyweight between treatment 1, treatment 2 and treatment 3. Despite the very high oocytes count in Treatment 1, the UPM village chicken showed positive growth without exhibiting clinical signs such as blood tinged faeces. Throughout this study, it shown that Neem leaves has anticoccidial effect. It also can be used to replace coccidiostat.

## CHAPTER ONE

### INTRODUCTION

Neem, *Azadirachta indica* also known margosa tree or lilac of India. For centuries Neem is being used as part of traditional medicine around the world, especially in India and South Asia (Biswas et al., 2008; Subapriya and Nagini, 2008). The neem tree is an evergreen, or deciduous, fast-growing plant which may reach a height of 25 meters. There are ethnopharmacological reports supporting the oval use of its leaves against internal parasites. (Agyare et al., 2014). Thus, a study was carried out to use neem as an alternative to the conventional medication against coccidiosis in village chicken.

Poultry is contributing enormously to food production by playing a vital role to the nation by providing the cheapest protein in form of meats and eggs. However, poultry production faces threats diseases from such as coccidiosis cause by a protozoan which may result in economic lost. Parasites are organisms that live in or on another organism which is known as host. It gain advantages at the expense of the host. Coccidiosis in this case is the infection the mucosa of intestine, causing bloody strained faeces. Intestinal parasite such as coccidia is considered as one of the economically important worldwide disease that cause high mortality and morbidity to poor food conversion and weight gain in poultry industry. Coccidiosis is important in free ranged chickens compared to chicken reared internally. Nature farming usually involved free ranged which zero antibiotics usage. Neem can be a potential alternatives for antibiotic against coccidiosis in chicken.

## **1.1 Research Problem**

Herbal alternative as potential to replace conventional antibiotic to control coccidiosis in village chicken.

## **1.2 Objectives**

General Objective:

To determine the effectiveness of dietary inclusion of neem leaf in prevention of coccidiosis.

Specific Objectives:

- i) To determine the effectiveness of dietary inclusion of Neem leaf in prevention of coccidiosis in village chicken
- ii) To study the effect of dietary Neem leaf on the growth performance of free range village chicken

## **1.3 Hypothesis**

Neem leaf can replace conventional method in control of coccidiosis in village chickens.

#### **1.4 Significance of Study**

The alternatives by using herbal alternative such as neem leaf that can control the coccidia in village chicken. The finding of this study will provide better information in prevention of intestinal parasitism by using neem leaf dietary inclusion as a part of zero antibiotic chicken rearing.





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