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A STUDY OF INTERNAL PARASITES IN FREE RANGE TURKEYS IN SIMPANG RENGGAM FARM, JOHOR, MALAYSIA

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A STUDY OF INTERNAL PARASITES IN FREE RANGE TURKEYS IN SIMPANG RENGGAM FARM, JOHOR, MALAYSIA

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CERTIFICATION

It is hereby certified that we have read this project paper entitled "A STUDY OF INTERNAL PARASITES IN FREE RANGE TURKEY IN SIMPANG RENGGAM FARM, JOHOR, MALAYSIA ", by Ashnita Shivani Prasad 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 – Project.

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DEDICATION

I bow down in prayer to the presiding deities of learning and wisdom Mata Saraswati and Lord Ganesha for their unquantifiable blessings and approval,

The love of my life, my parents

(Sohan Prasad & Anita Prasad),

My beloved siblings

(Anushita Shayani & Shahil Anushkar),

My friends,

And to all my lecturers for lending a helping hand, their advice, support and continuous encouragement throughout the development of this thesis project.

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LIST OF ABBREVIATIONS

Epg	Egg per gram
Opg	Oocyst per gram
G	Gram
%	Percentage

ABSTRAK

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

KAJIAN PARASIT DALAMAN DALAM AYAM BELANDA SISTEM BEBAS DI LADANG SIMPANG RENGGAM , JOHOR, MALAYSIA

Oleh

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2018

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Penyelia Bersama: Dr Nur Mahiza Md Isa

Pembelaan secara lepas bebas adalah sebahagian daripada perladangan ayam turki di negara membangun. Ayam turki dibesarkan dengan cara pembelaan secara bebas lebih senang untuk beradaptasi di luar. Terdapat beberapa laporan yang terhad tentang parasit dalaman dalam pembelaan ayam turki secara bebas di Malaysia.Laporan ini disediakan untuk membuat kajian tentang parasit dalaman di pembelaan secara bebas ayam Turki di Malaysia dari ladang Simpang Renggam, daerah kluang, Johor.Sejumlah 5 sampel darah, 5 sampel tinja dan 5 sistem penghadaman telah dikumpul dari ayam turki betina dan pelbagai parasit telah dikenalpasti.Parasit darah yang dijumpai di dalam ayam turki

adalah *Leucocytozoon spp.* dan *Plasmodium spp.* sebanyak 1(20%) dan 2(40%).3 lagi spesies yang telur tinjanya sudah dijangkiti adalah *Eimeria spp* 3(60%) diikuti *Heterakis gallinarum 2*(40%) dan *Capillaria sp* 1(20%).Untuk cacing sistem penghadaman pula, *Capillaria spp* dijumpai di dalam ayam 20%.*Acanthocephalon* juga ada sebanyak 2(40%). Secara umumnya, kelima-lima ayam betina 2(40%) telah terjangkit dengan parasit darah dan 4(80%) terjangkit dengan parasit sistem penghadaman.Kajian ini adalah yang kedua dalam menyediakan informasi berkenaan parasit dalaman dalam ayam turki di Malaysia.Informasi ini membantu pengkaji dan veterinarwan untuk membina strategi rawatan dan kawalan.

Kata kunci: ayam turki, pembelaan secara bebas, parasit darah, sampel tinja, sistem penghadaman, telur, Malaysia

ABSTRACT

Abstract of the project paper presented to the Faculty of Veterinary Medicine in partial requirement for the course VPD 4999 – Final Year Project.

A STUDY OF INTERNAL PARASITES IN FREE RANGE TURKEYS IN SIMPANG RENGGAM FARM, JOHOR, MALAYSIA

By

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2018

Supervisor: Dr Lokman Hakim Idris

Co-Supervisor: Dr Nur Mahiza Md Isa

Free range rearing is an integral part of turkey farming in most of the developing countries of world. Turkeys raised in free-range system are free to live and browse outside. Very scarce reports regarding internal parasites on free ranging turkeys are available from Malaysia. The present research project was designed to study internal parasites in free-range turkeys in Malaysia from Simpang Renggam Farm, Kluang District, Johor. A total of 5 blood samples, 5 faecal samples and 5 gastrointestinal tract specimens were collected from the female turkeys and different parasites were identified. The blood parasites found in turkeys were *Leucocytozoon spp* and *Plasmodium spp* at 1 (20%) and 2 (40%).Three species of faecal oocyst/egg infected the turkeys. *Eimeria spp* had the highest prevalence of 3(60%) followed by *Heterakis*

gallinarum 2(40%) and *Capillaria sp* 1(20%). For the gastrointestinal worms, *Capillaria spp* worm were found in one turkey at 20%. *Acanthocephalan*wormshad the prevalence of 2(40%).Generally, of these 5 female birds, 2 (40%) were infected with blood parasites and 4(80%) were infected with gastrointestinal parasites.The study is second in its nature in providing the valuable information regarding endoparasites in turkeys from Malaysia. This information will essentially be helpful for the researchers and local veterinarians to develop strategies for both treatment and control of these endoparasites affecting turkeys.

Keywords: turkey, free range, internal parasites, blood parasites, faecal samples, gastrointestinal tract, oocyst,egg, Malaysia

1.0 INTRODUCTION

Poultry is one of the fastest growing agricultural sectors. The poultry industry provides meat that is preferred by almost all cultures, is affordable and of good quality. In Malaysia, the poultry farming business has been in existence for a long time.(Ariffin, Mohtar, & Baluch, 2004) Poultry production specifically includes chickens, ducks, guinea fowl, turkey and ostrich. Turkey and chicken productions however make up the main component of the commercial poultry.

Commercial turkey farming is a profitable business idea. Turkeys are native to North America. They are a type of poultry that belong to the order *Galliformes*, along with chickens. There are two species of wild turkey: the North American Wild Turkey (*Meleagris gallopavo*) and the Central American Ocellated Turkey (*M. ocellata*). Global turkey meat production is about 5.7 m tonnes/year.(Poultry Hub, 2018) Turkey grows faster like broiler chickens and become suitable for slaughter purpose within a very short time.

Turkey meat is less consumed in Malaysia compared to western countries such as Europe and United States. Most people eat broiler chickens that are available in many places and the price is more reasonable than turkey meat. Normally, turkey meat is sold at RM25 to RM30 per kg on average in some poultry farm.(Suhaila & Khadijah, 2017).In addition, the lack of awareness makes turkey meat not popular as a delicacy or dish.

Turkey parasites commonly seen include protozoa, helminths and arthropods. Parasitic infections have a negative impact on production whereby it decreases the growth rate and increases mortality. It is obvious that poultry maintained under free-

range conditions may be heavily parasitized due to the fact that they scavenge in the farm area.

Bird blood parasites (avian haematozoa) can cause disease and death of their hosts. It is likely that all species within the genera *Haemoproteus, Plasmodium and Leucocytozoon* are harmful to a greater or lesser degree, depending the range of hosts they can infect, environmental stress, age, nutrition and the availability of suitable insects (vectors) to transmit disease between birds.(Queensland Museum, 2018)

Worms are extremely common, particularly in free-range poultry. Eggs/oocyst or larvae in faeces can indicate the presence of parasitic infection and facilitate the diagnosis of parasitic disease. Many parasites use a range of bird species as definitive hosts. These parasites can have serious pathological effects on birds, inducing high mortality rates during peaks of infection.(Colin Walker, 2015)

Parasitism causes tremendous loss in poultry production. After a disease has once gained a foothold in a flock, far more time and money are usually spent in getting rid of the disease than would have been necessary to keep the premises free of it. Poultry raisers are demanding more and better control measures for both parasites and diseases.

Free range and scavenging behaviour of turkey's increases exposure to soil and intermediate host, which may lead to parasitic infection. Very limited study had been done on parasitism in free-range turkeys in Malaysia.

Therefore, this study was undertaken to fulfil the following objective:

- To identify internal parasites harboured by free-range turkeys in Malaysia (Simpang Renggam Farm).

For this research, the following hypothesis was proposed:

- There are potential internal parasites harboured by free range Turkeys in Malaysia (Simpang Renggam Farm).

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