SEASONAL PREVALENCE OF INTESTINAL HELMINTH PARASITES IN RHESUS MONKEY (*Macaca mulatta*) OF SWOYAMBHU AREA OF KATHMANDU VALLEY

A DISSERTATION

FOR THE PARTIAL FULFILMENT OF THE REQUIREMENTS

FOR THE MASTER'S DEGREE OF SCIENCE

IN

PARASITOLOGY

BY

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RECOMMENDATION

It is our pleasure to mention here that **Mrs. Sangita Nepal** has completed her dissertation work entitled **"SEASONAL PREVALENCE OF INTESTINAL HELMINTH PARASITES IN RHESUS MONKEY (*Macaca mulatta*) OF SWOYAMBHU AREA OF KATHMANDU VALLEY"** under our supervision and guidance. It is her original work and brings out truthful results and findings in the concerned field.

We strongly recommend this dissertation for approval for the partial fulfillment of the requirement for the degree of **Master of Science in Zoology** at Tribhuvan University with special paper in **Parasitology.**

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LETTER OF APPROVAL

On the recommendation of supervisor **Mr. Janak Raj Subedi** and co-supervisor **Dr. Kedar Bahadur Karki**, this dissertation of **Mrs. Sangita Nepal** is approved for evaluation and is submitted to the Tribhuwan University in partial fulfillment of the requirements for Master,s Degree of Science in Zoology (**Parasitology**).

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APPROVAL

This dissertation presented by Mrs. Sangita Nepal entitled **"SEASONAL PREVALENCE OF INTESTINAL HELMINTH PARASITES IN RHESUS MONKEY (*Macaca mulatta*) OF SWOYAMBHU AREA OF KATHMANDU VALLEY"** has been approved partial fulfillment of the requirements for the Master's Degree in Zoology with **Parasitology** as specialization paper.

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DECLARATION

I hereby declare that the work presented in this thesis has been done myself and has not submitted elsewhere for the award of any degree. All sources of information have been specifically acknowledged by references to the authors or institution.

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ABSTRACT

Altogether 300 faecal samples of Rhesus monkey were collected within two seasons, summer and winter season from Swoymabhu area. Equal numbers of samples were collected in both seasons. The current study was carried out in order to observe the seasonal prevalence of intestinal helminth parasites of Rhesus monkey. Sedimentation and floatation technique were used to detect the helminith parasites. Out of 300 samples, 255 (85%) were found to be positive and rest 45 (15%) were found to be negative. The present study revealed the prevalence of nematodes (75%), cestodes (10%) and trematodes (15%).

In **Nematodes genera**, *Strongyloides* sp., *Trichostrongylus* sp. and *Toxocara* sp., were found to be in higher number. In **Tremotodes genera**, *Schistosoma* sp. was found in higher number. Similarly, in **Cestodes genera,** *Dipylidium* sp. was found in higher number.In nematodes genera, *Bunostomum* sp., cestodes genera, *Dipylidium* sp., in trematodes genera, *Schistosoma* sp., were reported for the first time in Nepal in Rhesus monkey.

Among the total 255 positive samples, 101 (39.61%) were found to have single infection and rest 154 (60.39%) were found to have multiple infection. The general prevalence for three different genera is as follows: **Nemotodes –** *Strongyloides* sp. (27.06%), *Trichostrongylus* sp. (11.37%) *Dictyocaulus* sp. (7.45%), *Haemonchus* sp. (4.31%), *Ostertagia* sp. (5.88%), *Trichuris* sp. (9.80%), *Capillaria* sp. (6.27%), *Toxocara* sp. (12.94%), *Chabertia* sp. (8.63%), *Ascaris* sp. (7.45%), *Oesophagostomum* sp. (10.59%), *Ancylostoma* sp. (2.75%), *Bunostomum* sp. (1.96%), *Oxyuris* sp. (3.14%) and *Cooperia* sp. (4.31%).**Trematodes:** *Dicrocoelium* sp. (9.80%), *Schistosoma* sp. (18.04%) and *Fasciola* sp. (9.80%). **Cestodes**: *Taenia* sp. (9.80%) and *Dipylidium* sp. (9.80%).

The average prevalence of helminth parasite was found to be 85% during both the seasons. The prevalence in summer (86.67%) is higher than the prevalence in winter season (83.33%). All the genus and species of intestinal parasites are reported here for the second time from Rhesus monkey (*Macaca mulatta*) from Nepal where *Schistosoma, Fasciola, Dipylidium* and *Bunostomum* are reported for the first time in Nepal. The difference in prevalence of helminth parasites during both seasons were found statistically significant (χ^2=16.73, P<0.05, d.f.=2).

Key words: Helminth, Trematodes, Cestodes Nematodes, Parasite, Prevalence, Sedimentation, Flotation.

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ABBREVIATIONS

ADPCD – Animal Disease Protection and Division

AGDP – Agriculture Gross Domestic Product

CDZ – Central Department of Zoology

CVL – Central Veterinery Laboratory

DNR – Department of National Resource

EPG – Eggs per gram

FAO – Food and Agricultural Organization

GI – Gastro Intestinal

gm – Gram

IAAS – Institute of Agricultural and Animal Sciences

IFP – Integrated Family Planning

km – Kilometers

LS – Livestock

LP – Livestock Production

m – meter

mins – minutes

ml - milliliter

mm – millimeter

No – Number

PCP – Parasite Control Project

PCR – Polymerase Chain Reaction

rpm – Revolution per minute

SP. – Species

T.U. – Tribhuwan University

USSR – Union of Soviet Socialist Republics

VDC – Village Development Committee

VEC – Veterinary Epidemological Centre

WHO – World Health Organization