

**SURVEY OF BUFFALO SLAUGHTERING PLACES AND MEAT SHOPS OF  
KIRTIPUR MUNICIPALITY FOR INFRASTRUCTURE FACILITIES AND  
PREVALENCE OF HELMINTH PARASITES**

**A**

**THESIS**

**SUBMITTED**

**In Partial Fulfillment of the Requirements for the Degree of Masters of  
Science in Zoology with special paper Parasitology**

**Submitted By**

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**SUBMITTED TO**

**CENTRAL DEPARTMENT OF ZOOLOGY**

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## RECOMMENDATION

It is our pleasure to mention here that **Mr. Pabitra Muni Bajracharya** has completed his dissertation work entitled **“SURVEY OF BUFFALO SLAUGHTERING PLACES AND MEAT SHOPS OF KIRTIPUR MUNICIPALITY FOR INFRASTRUCTURE FACILITIES AND PREVALENCE OF HELMINTH PARASITES”** under our supervision and guidance. It is his original work and brings out useful results and findings in the concerned field.

We strongly recommend this dissertation for approval for the partial fulfillment of the requirements for the Master's Degree of Science in Zoology with special paper **Parasitology**.

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## DECLARATION

I hereby declare that the work presented in this thesis has been done myself and has not been 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

During the study period from Nov. 2007 to July 2008, a total of 200 buffaloes slaughtered for meat were surveyed in a total of 12 slaughtering places found over the entire Kirtipur municipality. The buffaloes were categorized as male, female, calf, adult and old, and examination was carried out.

Out of total examined, 39 buffaloes (19.50%) were found positive for hydatid cysts. More buffaloes were found infected with *Echinococcus* during winter (25.00%) than summer (14.00%) which was significant ( $\chi^2_{0.05}$ , 1d.f =3.851). Females (23.08%) were found infected with *Echinococcus* more often than males (13.79%) but the difference was not found significant ( $\chi^2_{0.05}$ , 1d.f =3.851). Again old animals (30.25%) were found more infected with *Echinococcus* than calves (11.11%) and adults (7.84%) which was significant as well ( $\chi^2_{0.05}$ , 2d.f =14.19). Altogether 100 hydatid cysts were found in 39 animals (an average of 2.56 cysts per animal) and out of them 14 (35.89%) animals had single infection while 25 (64.10%) had multiple infection. Similarly 94.00% of the cysts observed were found fertile while only 6.00% was found sterile. Hydatid cysts were observed mainly in the lungs and the livers. 76.00% were located in lungs, 23.00% in liver and 1.00% in the spleen.

The study showed 57 (28.50%) buffaloes positive for *Fasciola*: the prevalence being higher during winter (35.00%) in comparison to summer (22.00%). Females (38.05%) had fascioliasis more often than males (16.09%). Also old animals (35.78%) were found more infected than calves (14.81%) and adults (29.41%). Infection with *Fasciola hepatica* (59.65%) was found slightly greater in compare to *Fasciola gigantica* (52.63%). The prevalence varied significantly between different seasons ( $\chi^2_{0.05}$ , 1d.f =4.14); sexes ( $\chi^2_{0.05}$ , 1d.f =11.63) and ages ( $\chi^2_{0.05}$ , 2d.f =7.45).

Similarly 27.50% buffaloes were found infected with *Taenia* cyst (cysticercosis): the prevalence being 27.00% during winter and 28.00% during the summer. The prevalence was found more in females (34.51%) than in males (18.39%). Again old animals (41.05%) were found infected with the cyst of *Taenia saginata* more often than the calves (9.26%) and adults (21.56%). The cysts were mostly observed in the food pipe. The prevalence varied significantly between sexes ( $\chi^2_{0.05}$ , 1d.f =6.39) and different age group ( $\chi^2_{0.05}$ , 2d.f =18.66) of the slaughtered animals but not varied between winter and summer season ( $\chi^2_{0.05}$ , 1d.f =0.024).

The survey of slaughtering places and meat shops revealed the poor infrastructure and facilities present in them. 66.66% of the slaughtering places lacked even the basic facilities like facilities of roof, concrete floor, good water supply and space or container for offal disposal drainage and were always found visited by dogs. 67.85% of the butchers were unaware of the meat borne diseases and 64.28% butchers didn't have any knowledge about impact on environment due to slaughtering places. During the study, 36 (72.00%) buff selling shops were found over the entire Kirtipur municipality. The facilities in these shops were also found primitive or lacking and most of the meat sellers (88.88%) had no idea about meat borne diseases as well.

The study found no pre and post mortem meat inspection and slaughter house examination by any authority of the government institution.

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## ACRONYMS AND ABBREVIATIONS

AGAL	Agriculture and Livestock
CABI	Cambridge International
CBS	Central Bureau of Statistics
CDZ	Central Department of Zoology
CE	Cystic Echinococcus
CTVM	Centre for Tropical Veterinary Medicine
d.f.	Degree of Freedom
DFID	Department for International Development
DLS	Department of Livestock Services
Ed.	Edition
ELISA	Enzyme Linked Immunosorbent Assay
SCORENA	European System of Cooperative Research Networks in Agriculture
FAO	Food and Agriculture Organization of the United Nations
GDP	Gross Domestic Product
IAAS	Institute of Agriculture and Animal Sciences
IDRC	International Development Research Centre
M	Million
NZFHRC	National Zoonosis and Food Hygiene Research Centre
Spp.	Species
TLDP	Third Livestock Development Project
TU	Tribhuvan University
VDC	Village Development Committee
WHO	World Health Organization