

**MICROBIOLOGICAL STUDY OF RAW BUFF MEAT
AND RAW BUFF SAUSAGES SOLD IN
BHAKTAPUR**

**A Dissertation Submitted to
The Central Department of Microbiology
In partial fulfillment of the requirements for the Award of the
Degree of
Master of Science in Microbiology
(Environment and Public Health Microbiology)**

**Submitted by
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RECOMMENDATION

This is to certify that **Ms. Renu Koju** has completed this dissertation work entitled “**Microbiological study of raw buff meat and raw buff sausages sold in Bhaktapur**” as a partial fulfillment of M. Sc. Degree in Microbiology under our supervision. To our knowledge this thesis work has not been submitted for any other degree.

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ABSTRACT

The present study was done to investigate the microbiological quality of raw buff meat and raw buff sausages of Bhaktapur. Altogether 45 raw buff meat samples collected from nine different locations and 30 raw buff sausages sample from three different sites were analyzed. The total viable count, total coliform count and isolation and identification of the organisms were carried out following the standard procedures. The mean total plate count of raw buff meat ranged from 1.9×10^6 cfu/gm to 1.4×10^7 cfu/gm and that of raw buff sausages ranged from 1.5×10^5 cfu/gm to 8.3×10^5 cfu/gm whereas the total coliform count of raw buff meat ranged from 6.3×10^4 cfu/gm to 1.3×10^6 cfu/gm and that of raw buff sausages ranged from 1.3×10^3 cfu/gm to 3.5×10^4 cfu/gm. The organism isolated from the raw buff meat includes of *Escherichia coli* (34.0%) *Klebsiella oxytoca* (12.0%), *Citrobacter diversus* and *Enterobacter* spp (10.0%) *Citrobacter freundii* and *Staphylococcus aureus* (7.0%), *Proteus vulgaris* (5.0%), *Salmonella* spp and *K. pneumonia* (4.0%) and *Pr. mirabilis*, *Salmonella* spp and *Shigella* spp (2.0%) and from raw buff sausages isolated bacteria are:- *E.coli* (37.9%), *K. pneumonia* (14.8) *Citrobacter freundii* and *Staphylococcus aureus* (12.7%), *Citrobacter diversus* (8.5%), *Enterobacter* spp and *K. oxytoca* (6.3%), *Salmonella* Typhi, *Shigella* spp and *Pr. mirabilis* (2.1%).

Antibiotic susceptibility test was also done against each isolated organism. The result show almost all the isolates were susceptible to tested antibiotics used except some few strain. Among the antibiotics used, ofloxacin, chloramphenicol, cotrimoxazole, and amikacin were found to be highly effective whereas tetracycline and nalidixic acid were found to least effective in comparison to other antibiotics disc.

Most of the bacterial isolate were found to be commensals organism. Since these bacteria are opportunists, they can be pathogenic to human in condition when the host defence mechanism is weak. Thus it is suggested that regular monitoring of the quality of meat and sausages must be practiced to avoid any food-borne pathogenic outbreaks in future.

Key Words: - raw meat, buff meat, buff sausages, microbial profile, antibiotics susceptibility test

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ABBREVIATIONS

AVC	Aerobic Viable Count
CFU/gm	Colony Forming Unit per unit gram
EHEC	Enterohaemorrhagic <i>E. coli</i>
EMB	Eosine methylene blue
ICMSF	International commission on Microbiological Specification of Food
Log	logarithm
MAC	Mac Conkey agar
MDR	Multidrug resistant
MPN	Most Probable Number
MSA	Mannitol Salt agar
PFGF	Pulsed Field Gel Electrophoresis
TPC	Total Plate Count
TPCA	Total plate count agar
VRBA	Violet red bile agar
XLD	Xylose Lysine Deoxycholate agar