



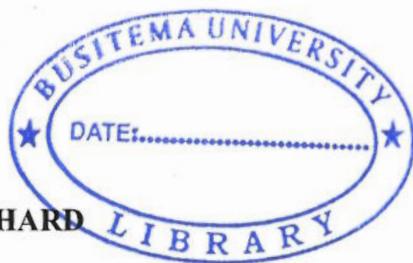
**BUSITEMA
UNIVERSITY**
Pursuing Excellence

**PREVALENCE OF BOVINE TRYPANOSOMOSIS IN ZEBU CATTLE IN LABONGO
AKWANG SUB COUNTY**

KITGUM DISTRICT

BY

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**A DISSERTATION SUBMITTED TO THE FACULTY OF AGRICULTURE AND
ANIMAL SCIENCES IN PARTIAL FULFILLMENT FOR THE AWARD OF A
BACHELOR DEGREE IN ANIMAL PRODUCTION AND MANAGEMENT OF
BUSITEMA UNIVERSITY**

JUNE 2014

DECLARATION

I KOMAKECH Richard hereby declare that this dissertation represents my work and has not previously been submitted for a degree at this or any other university.

Signed.....
Date..... *R 15 - July - 2014*

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APPROVAL

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DEDICATION

I dedicate this work to my Mother Adong Magdalene, my father Gabriel Oloya (RIP), my sister Aya Immaculate and brothers (Anywar Mathew and Tabu Robert)

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LIST OF ABBREVIATIONS

AAT	African Animal Trypanosomosis
D.V.O	District Veterinary Officer
ELISA	Enzyme-Linked Immunosorbent Assay
FAO	Food and Agricultural Organisations
KDLG	Kitgum District Local Government
MAAIF	Ministry of Agriculture Animal Industry and Fisheries
MDGs	Millennium Development Goals
NGOs	Non-Governmental Organisations
NLPIP	National Livestock Productivity Improvement Project
NLPIP	Nation Livestock Productivity Improvement Programmes
OIE	Organisation Internationale Epizootes (World Organisation for Animal Welfare)
PAAT	the Program against African Trypanosomosis
PAHO	Pan American Health Organisation
PATTEC	Pan African Tsetse and Trypanosomosis Eradication Campaign
PCR	Polymerase Chain Reaction
UBOS	Uganda Bureau of Standards
W.H.O	World Health Organisation

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ABSTRACT

Bovine trypanosomosis is one of the major threats to the cattle productivity in Kitgum district, Akwanga Sub County. However, treatments and controls of the disease had been done without determining the prevalence of trypanosome in the animals.

A cross sectional study was conducted in Akwanga Sub County, Kitgum district, Uganda to determine prevalence of bovine trypanosomosis among zebu cattle. The study was done from the months of February to April 2014. Blood samples were collected from 112 randomly selected zebu breed of cattle in three parishes (Lamit parish, Pajimo parish and Lugwar parish) of Akwanga Sub County. A total of 48, 44 and 20 Zebu cattle were examined from Lamit, Pajimo and Lugwar parish respectively. Giemsa stained thin blood smear examination technique was used for parasite detection and identification.

The overall prevalence was 16.96% (19/112). The prevalence in Lamit, Pajimo and Lugwar parish were 27.08%, 11.36% and 5.00%, respectively with a statistical significant difference ($P < 0.05$) ($X^2=6.501$, $p= 0.0387$) among them. The statistical analysis revealed that no significant difference ($P > 0.05$,) ($X^2=0.025$, $p=0.874$) in prevalence was found between male (16.32%) and female (17.46%) animals. The prevalence was (14.705 %) and (17.948%) in young and mature cattle, respectively with no significant difference ($P > 0.05$) ($X^2=0.177$, $p=0.673$) between them.

According to this study it showed that trypanosomosis is the major threat for livestock production in the study area. The overall prevalence of 16.96% bovine trypanosomosis recorded in the present study is a sign that the disease is a threatening factor to cattle production in the study area. The prevalence of bovine trypanosomosis was higher in female than in males and higher in mature cattle than in the younger ones. Research needs to be carried to confirm why the prevalence rate was low in young and male animals unlike in the mature and the female zebu cattle.

Generally, more research should be provided to both the disease vector and disease. Creation of Awareness to the cattle keepers especially on the disease effects on livestock productivity and the methods of control shall be very important in the studied area. This study further recommends that farmers should concentrate more in keeping the male zebu cattle than the

female animals since they use the male animals as source of draught power in their homes. More study on the occurrence of trypanosomosis in different age groups and sexes of animals should be conducted.

Key words: Cross sectional, Prevalence, Trypanosomosis, Giemsa, Akwanga Sub County.

CHAPTER ONE INTRODUCTION

1.0 Background

Livestock production in Uganda contributes about 1.9 percent of the total value of 23.2 percent GDP (UBOS, 2013). Formal export earnings of live animal of the fiscal year 2012/2013 were about 0.1% (UBOS, 2013). The greater attribute to this reduction in the export earnings from 2009-2012 was due to diseases that were major constraints to the production in the pastoral and agro pastoral areas of the country this was further supported by research findings that was done in the recent past. The most notable nuance was the Bovine Trypanosomosis (Ocando *et al.*, 2005). The direct impacts of trypanosomosis in production potential are seen in term of losses in milk, meat production, mortality and morbidity (PAAT, 2003) and the indirect losses include livestock and animal power exclusion from the hugest fertile infested lands(Bekele & Nasir,2011).

Bovine Trypanosomosis is a protozoan disease that is caused by *trypanosome spp* and transmitted by bites from tsetse flies (*Glossina spp*) (Alemayehu *et al.*, 2012). *Trypanosoma brucei*, *T.congolense*, and *T.vivax* are the infective agents for bovine trypanosomosis (Magona *et al.*, 2003). An infection with trypanosomes in cattle is responsible for peaks of hyperthermia, anaemia, severe loss in meat and milk production, decrease in fertility and increasing calf mortality (Zubairu *et al.*, 2013, Wanga & Munga, 2011).The tsetse -vectored disease is widely spread about 10 million Km² of fertile land across 37 countries in Africa as a continent in which Uganda is included (Oluwafemi *et al.*, 2007).

The livestock is observed to be the reservoir of the human trypanosomosis and poses a serious threat to human lives and livelihood. Up to 18% of the domestic animals in emerging sleeping sickness area are seen to be the reservoir of the disease (Magona & waiubengo., 2011) and constitutes a greatest constraint to livestock production and responsible for under utilisation of natural resources in Africa (Mbabin *et al.*,2013).

The tsetse flies mostly infest the woodland and savannah areas which are a good potential grazing area for both wild and domestic animals (Fentahun & Tekeba, 2013). Some animals of wildlife species are trypanotolerant to the disease, which means the animals are resistant with trypanosomes infection as it was studied by (Swai & Kaaya ,2012). An entomology subsector

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