



**BUSITEMA
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Pursuing Excellence

PREVALENCE AND RISK FACTORS OF BOVINE BRUCELLOSIS

IN NSAMBYA SUBCOUNTY, KYANKWANZI DISTRICT

BY

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**A DISSERTATION SUBMITTED TO THE FACULTY OF AGRICULTURE AND
ANIMAL SCIENCES AS A REQUIREMENT IN PARTIAL FULFILMENT OF AWARD
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DECLARATION.

I NKWATSIBWE NORMAN declare that this was my work and has never been submitted to this university or any higher institution of learning for the award of a bachelor's degree

Student _____

NKWATSIBWE NORMAN

Signature.....

Date.....

This research proposal thesis is submitted by approval of

Supervisor

Dr. Ekou Justin

Signature.....

Date.....

DEDICATION

This research proposal was dedicated to my Dad Mr. Kamuntu George and my family members who provided much support during my research study.

Special thanks goes to my supervisor Dr. Ekou Justin.

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LIST OF ABBREVIATIONS

OIE	World Organisation for Animal Health
RBPT	Rose Bengal Plate Test
ELISA	Enzyme-Linked Immunosorbent Assay
CFT	Complement Fixation Test
FAO	Food and Agriculture Organisation of United Nation
SAT	Serum Agglutination Test
PCR	Polymerase Chain Reaction
SPSS	Statistical Package for social science
DVO	District Veterinary Officer
GPS	Global Positioning System
NPHC	National Population and Housing Census
UBOS	Uganda Bureau of Statistic
Igm	Immunoglobulin M
IgG	Immunoglobulin G

ABSTRACT

The study was undertaken to investigate the prevalence and risk factors of bovine Bovine brucellosis in Nsambya sub-county, Kyankwanzi District. A total of 100 animals (cattle) were involved in the study to determine the prevalence and risk factors of bovine Bovine brucellosis. Bovine brucellosis causes heavy economic losses in livestock producers (Dieckhaus & Kyebambe, 2017). In Nsambya Sub-county, Kyankwanzi district it causes the same economic losses through reduction in milk production in aborting cows, increases the period between lactation and prolongs the inter-calving period and loss of calf drops that affects livestock sector, It results in culling of infertile cows and bulls hence resulting in economic loss (Alemu et al., 2014). Acrossectional study was conducted among animals and farmers Nsambya subcounty, Kyankwanzi district. Blood samples were collected from animals (cattle) and screened for *Brucella* using the Rose Bengal plate test and confirmed using serum Agglutination test. A questionnaire was used to collect data on the social demographic characteristic and risk factors associated with livestock and livestock holders. The overall prevalence of bovine Bovine brucellosis was 16% in the study in Nsambya sub-county, kyankwanzi district, the females exhibited a higher prevalence 71% than males 29% for Bovine brucellosis. Farmers who reported separation of mothers from the calves, their animals were 4.9 times more likely to contract Bovine brucellosis and the difference in occurrence of the diseases was statistically significant ($p=0.014$). Farmers who reported to have neighboring farms, their animals were 3.6 times more likely to contract Bovine brucellosis and the difference in the occurrence of the disease was statistically significant ($p=0.049$). The overall prevalence of bovine Bovine brucellosis was 16% in the study in Nsambya sub-county, kyankwanzi district. The females exhibited a higher prevalence 71% than males 29% for Bovine brucellosis this is probably because the farmers tend to keep more females than males. Awareness creation about the impact of the disease, the way of its transmission, risk factors, methods of prevention of the disease, and culling of the positive animals should be made. Proper hygienic and sanitation practices to reduce the risk of exposure to Bovine brucellosis like burying of aborted foetuses.

CHAPTER ONE: INTRODUCTION

1.1 Background.

Bovine brucellosis is focused on by the Food and Agriculture Organization (FAO), the World Health Organisation (WHO) and the Office International des Epizooties (OIE) as one of the major widespread zoonotic disease in the world (Abubakar et al., 2012). According to OIE, it is the second most important zoonotic disease in the world after rabies. The disease is also known as "Malta fever" or "Bovine brucellosis", it was so common in the areas of Malta and various other places along the Mediterranean coast. However, as transport and communication became available between different parts of the world, the disease spread from its original home. David Bruce first discovered the causative organism in 1889 from a fatal case of the disease. Bovine brucellosis is a very common disease especially to those working with infected animals and their tissues, more so the farm workers, veterinarians and abattoir workers; hence being common among males (Prevalence and Risk Factors Associated with Bovine brucellosis A Critical Literature Review, 2020). : The sero-prevalence revealed in this study that the overall positive-animal rates in the study districts were 21.5% in the west in 2009 and 3.4% in the east in 2008 (Kashiwazaki et al., 2012).

Bovine brucellosis is one of the most important zoonotic diseases which affects a variety of domestic and non-domestic animals and humans, causing high economic loss and public health burden especially in countries with no effective control programs (Abdalla & Hamid, 2012). The disease causes significant losses in sexually mature animals and it is manifested by late term abortions, weak calves, still births, infertility and characterized mainly by placentitis, epididymis, with excretion of the organisms in uterine discharges and milk (Abubakar et al., 2012).

Bovine brucellosis is caused by a Gram- negative bacterium of the genus *Brucella*, family Brucellaceae and class Alphaproteobacteria. It is widely distributed, causes economic losses in the production of livestock, and is also considered the highest transmissible zoonosis by direct contact with infected animals or the consumption of infected milk and dairy product (Baumgarten et al., 2016) It is caused by bacteria in the genus *Brucella*, which contains several species that are defined mainly on the basis of animal host specificity (Abdalla & Hamid, 2012).

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