



**BUSITEMA  
UNIVERSITY**  
*Pursuing Excellence*

**SERO-PREVALENCE OF BRUCELLOSIS IN CATTLE IN MAFUBIRA SUB-  
COUNTY, JINJA DISTRICT**

**BY**

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### DECLARATION

I, **Kubeketerya Isaac** declare that this dissertation is original work and has not been submitted and presented for any academic award to any university or any other institution of learning.

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### APPROVAL

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## **DEDICATION**

I dedicate this book to my beloved parents Ms. Naigoma Ruth and Mr. Kubeketerya. K. Ronald and not forgetting my best friend Akanya Elizabeth Pamella because they were always available whenever I needed them. I love you so much.

May the good Lord reward you abundantly.

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## LIST OF ABBREVIATIONS

AEZ	Agro-ecological zones
Cfsph	Center for Food Security and Public Health
CFT	Compliment Fixation Test
ELISA	Enzyme Linked Immune Sorbent Assay
FAO	Food and Agricultural Organization
FMD	Foot and Mouth Disease
LSD	Lumpy Skin Disease
OIE	Office Internal des Epizootics
RBPT	Rose Bengal Plate Test.

## ABSTRACT

A cross-sectional study was conducted in Mafubira sub-county, Jinja district to assess the sero-prevalence and the distribution of Brucellosis basing on sex, breeds and age and the risk factors for brucella sero-positivity in cattle. Blood samples of 164 cattle were randomly collected from 4 parishes and questionnaires administered to 81 cattle owners to determine the risk factors through face to face interviews, personal visits and observation. After collection, samples were transported in ice packs to Mbale Veterinary Diagnostic laboratory for screening using the Rose Bengal Plate Test. The collected data was analyzed using SPSS version 16 and the results presented using pie charts, graphs and tables. The sero-prevalence studies revealed the overall sero-prevalence of brucellosis in cattle in Mafubira sub-county to be 9.8%. The study also revealed that cows (10.7%) had a higher prevalence than the bulls (6.1%) hence no significant relationship between the prevalence and sex, age and breeds of the tested cattle. Three major risk factors were identified as: mixing of infected animals in a health herd (67.9%), sharing of pastures (42%) and watering points (40.7%). It can therefore be recommended that vaccination campaigns, especially of large free-grazing herds in the study area and Jinja as a whole can significantly reduce the prevalence of brucellosis in cattle and reduce the risk of transmission to humans. The authorities should institute preventive and control measures in order to reduce on this high prevalence.

## CHAPTER ONE: INTRODUCTION

### 1.0 Background

Brucellosis is still one of the most important and widespread zoonoses in the world caused by a member of the genus *Brucella*, it is a significant cause of reproductive losses in animals (FAO, 1995). Infections are usually caused by *B. abortus* in cattle, *B. ovis* and *B. melitensis* in goats and sheep, the most common consequences caused by Brucellosis are; abortions, placentitis, orchitis and epididymitis (Nuru & Schnurrenberg, 1975). The occurrence of brucellosis depends on predisposing factors such as farming systems and sanitation and the disease is high in places where there is unrestricted livestock movement, mixing and trading of animals as well as sharing of grazing grounds according to Kungu *et al.*, 2010.

Globally, today developed countries have managed to eradicate Brucellosis (Geering *et al.*, 1995) but still a serious problem in developing countries particularly in Africa, Middle East, Asia, Mediterranean and Latin America (Refai, 2002).

In Africa, particularly in sub Saharan Africa, the sero-prevalence of Brucellosis is estimated to be ranging from 10.2% to 25.7% (Mangen *et al.*, 2002). It is more or less endemic in most African Countries (Chukwu, 1985; Akakpo & Bornarel, 1987; Abbas, 2002).

In Uganda, Mwebe *et al.*, (2011) documented 10% sero-prevalence in livestock in a retrospective study carried out in Uganda from 1998 to 2008. In peri-urban and urban areas of Kampala, herd prevalence was reported to be 6.5% and it has also been reported that the higher plateau lands of Western and Eastern Uganda were zones of hyper endemicity for both humans and bovine brucellosis while Central and Southern parts of Uganda were zones of moderate endemicity (Makita *et al.*, 2011).

Economically, brucellosis causes a big negative impact to livestock keepers; it lowers calving rate, abortion, reduced milk production, quite high replacement cost of dead animal, and low value of sold cows (Nuru and Schnurrenberg, 1975).

### 1.1 Problem statement

Brucellosis remains one of the world's most widespread zoonoses, the prevalence of brucellosis in Uganda is 12.6 % and 10% according to Makita, (2011) and Mwebe, (2011) respectively, however these are estimates for the whole country which do not show the actual

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