



**SEROPREVALENCE OF BRUCELLOSIS IN CATTLE IN ARAPAI SUBCOUNTY,
SOROTI DISTRICT**

BY

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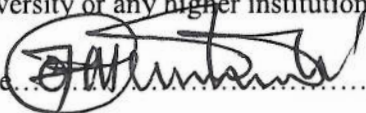
**DISSERTATION SUBMITTED TO THE FACULTY OF AGRICULTURE AND
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DECLARATION STATEMENT

I, **Egaru Daniel** declare that I'm the sole author of this dissertation and it's my own original work. The information contained in this dissertation is mine and has not been submitted and presented to any University or any higher institution of learning for any award.

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APPROVAL

This dissertation has been submitted for examination with the approval of my supervisor

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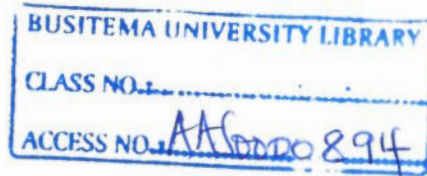
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DEDICATION

I dedicate this to my beloved parents Arengo Josephine and Albert Epedu for the tireless work they have performed in my education economically, social guidance in life because they have made me who I am today.

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LIST OF ABBREVIATIONS& ACRONYMS

ELISA –Enzyme Linked Immuno Sorbent Assay.

DVO – district veterinary officer.

SAT-Serum Agglutination Test

TAT- Tube Agglutination Test

RBPT- Rose Bengal Plate Test.

CFT- Compliment Fixation Test

BPAT- Buffered Plate Antigen Test

+v e - Positive

-Ve – Negative

SSPS -Statistical package of social science

C.L – Confidence interval .

χ^2 - Chai square

ABSTRACT

The study was carried out to establish the seroprevalence of Brucellosis in the cattle of Arapai Sub County by analysing its distribution in terms of sex, age, breed and parishes. By using simple random sampling, serum samples of 227 cattle from 36 herds were tested using Rose Bengal Plate agglutination test and information about the herds of cattle and demography of the livestock farmers was captured using questionnaires and data captured included number of cattle kept, their age, sex and then breeds, cattle management systems, abortion incidences and how the aborted materials were handled, knowledge of farmers about Brucellosis and vaccination activity done. Overall seroprevalence of Brucellosis in cattle in this sub county was obtained to be 15.4% (95% C.I, 11% - 20%). Prevalence by sex, age, breed, parish distribution were; **sex**, 95% ($\chi^2 = 0.429$, $P > 0.05$: males 13.0%, C.I, 6.1%-23.3% and females 16.5%, C.I, 11%-23.2 %), **age** 95% ($\chi^2 = 20.907$, $P > 0.05$: <2 years- 14.9%, C.I, 8.4 -23.7 and >2 years, 15.8%- C.I, 10% -23.1%), **breed**, 95% ($\chi^2 = 6.659$, $P > 0.05$: zebu, 16.2% -C.I, 11.2%-22.3%; crosses, 10% -C.I, 2.8%-23.7%; friezian, 100% -C.I, 100%-100%; Ankole breed, 0.0%). and at **parish** level, 95 ($\chi^2 = 20.907$, $P < 0.05$: Aloet, 18.7% -C.I, 11.3% -28.2%; Odudui, 8.8% -C.I 2.9%-19%; Arapai, 43.5% -C.I, 23.2%-65.5%; Dakabela, 5.7% -C.I, 1.1%-14.9%). The results showed seroprevalence by females were more infected than male, cattle > 2 years were more affected than those with one month – 2 years, prevalence by breed showed more infection in crosses and Friesians than in zebu but had no statistical significance whereas prevalence in the parishes produced significant statistical results ($p < 0.05$). This results call for a need to put control measures and intensify public awareness on the zoonotic spread and impacts of Brucellosis both in cattle and humans to protect the health of both animals and humans since its disease of world health concern.

CHAPTER ONE: INTRODUCTION

1.1 BACKGROUND

Brucellosis is a worldwide contagious and zoonotic Bacterial infectious disease caused by *Brucella* and one gets infected through contact with materials of abortion such as placenta, fetal fluids, urine, after birth testis, aborted foetus, vaginal discharge, milk from infected cow and wild animals (Rijpens, 1996). The veterinarians, dairy farmers, ranchers, slaughter house workers, hunters, microbiologist are highly exposed to the disease, (Garin-Bustuji *et al.* 1998; Corbel, 2006; Olsen and Tatu, 2010). It can spread from animals to humans but not between human beings (Moreno *et al.*, 2006; Corbel, 2006). *Brucella abortus* is responsible of causing disease in cattle and shoats, dogs and pigs (Green and Carmichael, 2006).

Globally today, developed countries have managed to eradicate Brucellosis (Geering *et al.*, 1995) but still its existing in developing continents such as Africa, Middle East, Asia, Mediterranean, Latin America (Refai, 2002) and map showing areas that are highly endemic, endemic and sporadic of brucellosis worldwide can be got in appendix 6

On the other hand, in Africa particularly in sub Saharan Africa, the seroprevalence of Brucellosis is estimated to be ranging from 10.2% to 25.7% according to (Mangen *et al.*, 2002).

However in Uganda, Mwebe *et al.* (2011) documented 10% seroprevalence in livestock in a retrospective study carried out in Uganda from year 1998 to 2008. In peri urban and urban areas of Kampala seroprevalence of Brucellosis was seen to be 12.6% (Makita, 2010) and 10% (Makita, 2011).

In Soroti specifically in Serere County which is currently a district, Brucellosis prevalence is about 16% (Ocaido *et al.*, 2005).

However, economically, Brucellosis causes a big negative impact to livestock keepers e.g. lowers calving rate, abortion, reduced milk production, quite high replacement cost of dead animal and low value of sold cow (Guru and Schnurrenberg, 1975) and also other people are being getting infected (Mangen *et al.*, 2000).

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