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PREVALENCE OF ANAPLASMA AND BABESIA PARASITES IN CATTLE SLAUGHTERED AT SOROTI MUNICIPAL ABATTOIR, SOROTI DISTRICT

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

JUNE, 2015

DECLARATION

I,**OPIO EMMANUEL,** do hereby declare that this dissertation is original and a work done from my own individual effort and has never been submitted to any institution for an award of any kind.

Sign.....Date.....28th/09/2015.....

Approval

This dissertation has been approved for examination by my supervisor,

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for Sign.....Date.....28/09/15.....

DEDICATION

This report is dedicated to the Almighty GOD and many other stakeholders who supported me financially, materially and spiritually, and a special dedication to my academic supervisor, Dr. G.M, KAMUGISA.May God bless you all.

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First and foremost, I would like to express my sincere thanks to the following for without whom this work would have been in vain; the District Verterinary Officer Soroti, Dr. EYUDU PATRICK, the technical staff of Soroti Municipal Abattoir and the Lira district laboratory technician, Dr. ORECH KENNETH; my Grandmother, Mrs. EJULIA PORO; Aunties Bongonyinge Joan,Alum Hilda,EjuuEvaline; My madam,Aleper Agnes; and friends,Obura Moses, Onyanga Moses and many more. I would like to assure you that your effort is not forgotten, but is being highly treasured. Ever y good work is certainly impossible to accomplish single handedly.

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TABLE OF CONTENTS

DECLARATION i

DEDICATION ii

ACKNOWLEDGEMENT iii

LIST OF TABLES vi

ABSTRACT vii

CHAPTER ONE 1

INTRODUCTION 1

1.1 Background 1

1.2 Problem Statement 1

1.3 Justification 1

1.4 General Objective 1

1.5 Specific Objectives 1

1.6 Research Question 2

1.7 Significance ofthe Study 2

1.8 Scope 2

CHAPTER TWO 3

REVIEW OF LITERATURE 3

2.1The Livestock Industry in Uganda 3

2.3Anaplasma Parasite 4

2.4.2Pathogenesis 6

2.4 Diagnosis 7

CHAPTER THREE 8

MATERIALS AND METHODS 8

3.1 The Study Area 8

3.2 Sample Size Determination 8

3.4 Data Analysis 9

3.5 Ethical andEnvironmental Considerations 9

3.6 Limitations to the Study 9

CHAPTER FOUR 10

PRESENTATION OF RESULTS 10

4.1 Prevalence of Anaplasma parasites in Cattle at the Soroti abattoir 10

4.2 Prevalence of Babesia parasites in Cattle at the Soroti abattoir 10

4.3 Prevalence of mixed infectionsof Anaplasma and Babesia parasites of Cattle at the Soroti abattoir 11

CHAPTER FIVE 12

DISCUSSION OF RESULTS 12

CHAPTER SIX 14

CONCLUSION AND RECOMMENDATIONS 14

6.1 Conclusion 14

6.2 Recommendations 14

REFERENCES 15

APPENDIX ONE 17

Data collection sheet 17

LIST OF TABLES

Table 4.1 variation in Prevalence of Anaplasma is Soroti abattoir**Error! Bookmark not defined.**

Table 4.2 variation in Prevalence of babesia parasites is Soroti abattoir __ **Error! Bookmark not defined.**

Table 4.2 variation in Prevalence of Co-infection of Anaplasma and babesia parasites is Soroti abattoir _____**Error! Bookmark not defined.**

ABSTRACT

Anaplasma and babesia parasites cause significant economic losses in the tropical and subtropical regions of the world including Uganda. Costs to farmers are incurred not only from mortality, abortion, loss of milk & meat production, loss of draft power and from therapeutics and control measures such as acaricide treatment, but also through their impact on international trade. However, the prevalence of Anaplasmosis and Babesiosis, and their impact on the local economy of Soroti district is not clear.For starters, across-sectional study was conducted to evaluate the prevalence of Anaplasma and Babesia parasites in cattle slaughtered at the Soroti municipal abattoir. The study,which was carried out during the months of May and June 2015, targeted the Soroti municipal abattoiras a hub for most of the livestock arriving from the different parts of Soroti district.One hundred (100) head of cattle were randomly selected without due regard to their sex.Age was determined using the dentition method.Thin blood smears were prepared for examinationof bloodsamples drawn aseptically from the jugular veinfor Anaplasma and the ear vein for Babesia parasites.A quantitative analysis was carried out and the results subjected to statistical tests using the Statistical Package for Social Scientists (SPSS) version 20. The overall prevalence of anaplasma parasites was 35% and that ofBabesia parasites 16%. There was a significant difference ($p = 0.006 < 0.05$) between the level ofanaplasma infections in different age groups.The sampled cattle were also assessed for haematological signs of anaemia(PCV $\leq$ 24).All cattle with mixed infection (n = 6/100)and some with onlyAnaplasma infection (n = 23/100)or Babesia infection(n = 13/100) exhibited anaemia. An additional 26/100 cattle exhibited anemia even when they were free of infections suggesting that otherunderlying factors than anaplasma and babesia infections are responsible. Farmers should be urged to put in place measures to ensure that their animals are kept healthy; free from disease and malnutrition.Some cattle, however, did not show any signs of anaemia despite being infected(Anaplasma n = 12/100);Babesian = 3/100).These symptomless cattle are possible subclinical carriers maintaining the parasites within the environment. The high prevalence of anaplasma and babesia parasites in cattle of Soroti district seems to point to a laxity in tick control measures within the district or a possibility of tick resistance to the acaricides being used. It is being recommended that Soroti district authorities carry out extensive sensitization of farmers about the importance of intensifying tick control measuresand also institute studies to determine the possibility of tick resistance to the acaricides in use.

CHAPTER ONE

INTRODUCT ION

1.1 Background

Diseases are one of the most important constraints to livestock productivity in Uganda.Of these, ticks and tick-borne diseases (TBDs) contribute a great deal to the problem(Anonymous, 1996). East Coast Fever, Anaplasmosis and Babesiosis are the most importantof the TBDs. These TBDs are widespread and lack seasonality (Otim, 2000). Anaplasma and babesia parasites are considered as one of the major impediments to the health and productive performance of cattle (Riajput*et al.*, 2005).

1.2 Problem Statement

Anaplasma and Babesia species cause significant economic losses in the tropical and subtropical regions of the world (Kursat*et al.*, 2004).including Uganda (Loria*et al.*, 1999; Gorge *et al.*, 2001).Costs to farmers are incurred not only from mortality, abortion, loss of milk&meat production, loss of draft power and from therapeutics and control measures such as acaricide treatment, but also through their impact on international trade (Mcleod and Kristisanson. 1999).

1.3 Justification

About 70 % of livestock in Uganda graze under the risk of TBDs (Ndyabahinduka, 1993).The prevalence of these TBDs, especiallyAnaplasmosis and Babesiosis,and their impact on the local economy of Soroti district is not clear, hence this study.

1.4 General Objective

To evaluate the prevalence of Anaplasma and Babesia parasites in cattle slaughtered at Soroti municipal abattoir.

1.5 Specific Objectives

1.5.1 To estimate the prevalence of Anaplasma parasites in cattle slaughtered at Soroti municipalabattoir.

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