



**BUSITEMA
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Pursuing Excellence

**ECONOMIC LOSS DUE TO HYDATIDOSIS IN GOATS AND SHEEP SLAUGHTERED
AT AMUDAT SLAUGHTER SLAB, AMUDAT DISTRICT**



CAKU BENJAMIN

BU/UG/2012/1873

benjamincaku@yahoo.com

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DECLARATION

I **Caku Benjamin** declare that, this dissertation is my own original work of my effort and has never been submitted in any other institution of learning for the award of academic documents.

Signature.......... Date ..24th/08/2015.....

APPROVAL

This dissertation has been submitted for examination under the supervision of:

Signature..... Date ..24/08/2015.....

Mr. Muyinda Robert
(Bsc. Technology in Biosciences)

Senior Technician
Department of Animal Production and Management
Faculty of Agriculture and Animal Sciences
Busitema University



DEDICATION

This work is dedicated to my parents, brothers and sisters.

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LIST OF ABBREVIATIONS/ACRONYMS

\$	US Dollar
Df	Degree of freedom
DNA	Deoxyribonucleic acid
G	Genotype
KALIP	Karamoja Livelihood Programme
Kg	Kilogram
M	Meter
MAAIF	Ministry of Agriculture Animal Industry and Fisheries
mm	millimeter
°C	Degrees Celsius
PCR	Polymerase chain reaction
PM	Post mortem
spp	Species
UBOS	Uganda National Bureau of Statistics
US	Ultrasound
USh	Ugandan shillings

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ABSTRACT

Hydatidosis is a zoonotic parasitic disease caused by the larval stage of the cestode *Echinococcus granulosus*. It causes great economic losses in goats and sheep from condemned pluck. A cross-sectional study was therefore conducted from March to April 2015 with the aim of estimating the annual economic loss and evaluating the distribution of hydatidosis in slaughtered goats and sheep with respect to body organs at Amudat slaughter slab, Amudat district.

A total of 140 goats and sheep slaughtered were selected randomly in both retrospective and prospective study. This involved review of records, visual, palpation, incisions and weighing of lung, liver and kidney. The proportion of infected organs was analyzed using z-test and the distribution of hydatidosis among goats and sheep was analyzed using chi-square, meanwhile the annual economic loss was estimated using a formula $[(N_1 \times I_1 \times C_1) + (N_n \times I_n \times C_n)]$.

The highest distribution of hydatidosis infection (40.0%) was recorded in lung and followed by (20.7%) in the liver while no cyst was recorded in Kidneys. Statistically, the difference between the proportion of the infected lungs and infected liver was significant ($p > .05$). The distribution of the disease in both goats and sheep was homogenous ($p < .05$).

The annual economic loss from condemned lung, liver and kidney due to hydatidosis in goats and sheep was estimated at USh1, 090, 009.0 (\$375.9) based on the local market price in the study period.

The result of this study reflected that the lungs of goats and sheep were most susceptible to hydatidosis and condemnation of lungs and liver caused considerable economic loss.

Therefore, strategies like dog keeping policies and construction of standard abattoir with disposal facilities would be appropriate to minimize the economic loss associated with the hydatidosis.

CHAPTER ONE: INTRODUCTION

1.1. Background

Hydatidosis is known to be one of the most important parasitic infections in livestock worldwide and one of the most widespread parasitic zoonoses (Craig, et al., 2007). It is caused by the larval stage of the cestode *Echinococcus granulosus*. It's distributed worldwide and this is mostly on account of the adaptability of the larval stage (hydatid cyst) to several domestic and wild mammalian intermediate hosts, including human beings (Craig, et al., 2007). The annual economic losses by hydatidosis are estimated at \$2 billion globally (Budke, Deplazes, & Torgerson, 2006).

It is endemic in Sub-Saharan African especially in Libya, Ethiopia, Morocco, Nigeria, Tunisia and Sudan (Grosso, Gruttadauria, Biondi, Marventano, & Mistretta, 2012). In the North African countries, losses due to hydatidosis have been estimated at \$ 60 million per year (Budke, et al., 2006). Ngorongoro district of Tanzania has prevalence of 63.8% and 34.7% in sheep and goats respectively (Ernest, Nonga, Kassuku, & Kazwala, 2009). The prevalence of hydatidosis in goats and sheep were 3.6% and 4.5% respectively in Turkana, Kenya (Njoroge, et al., 2002).

In Uganda, the losses due to diseases were estimated as \$ 86.3 million annually and post-slaughter condemnations contributed 10% before 2008 livestock census (MAAIF, 2010). Prevalence of *E. granulosus* was 66.3% in dogs in Moroto district (Inangolet, Biffa, Opuda-Asibo, Oloya, & Skjerve, 2010). Besides, Nakapiripirit district including Amudat by then had the highest goat population in Uganda in 2008 and Karamoja Region led in sheep with 4.4% and 49.4% respectively (UBOS, 2009). An average of 20 surgical cases of hydatidosis is reported in the hospitals of Karamoja and Mbarara per year (Nyakarahuka, et al., 2013). A close interaction of dogs, goats, sheep and human beings can increase the risk of transmission of hydatidosis (Nyakarahuka, et al., 2013).

In Uganda, little information is currently available on hydatidosis making it one of the neglected diseases (Nyakarahuka, et al., 2013). This study therefore, aims at estimating the economic loss from organ condemnation due to hydatidosis in intermediate hosts (goats and sheep) with a view to designing more effective control strategies.

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