



**BUSITEMA
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Pursuing Excellence

**ASSESSMENT OF HYDATID CYSTS PREVALENCE IN GOATS AND SHEEP
SLAUGHTERED AT SOROTI MUNICIPAL ABATTOIR, SOROTI DISTRICT.**



BY

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DECLARATION:

I, NYERO David, declare that this research dissertation has never been submitted to any university or any other higher institutions of learning in partial fulfillment of the requirements for any academic award.

Signature.....  date..... 16/08/2014

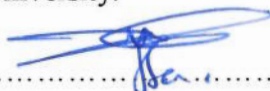
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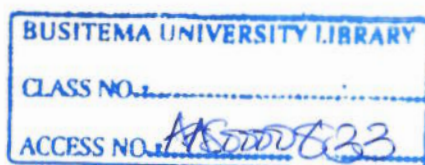
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DEDICATION

I would like to dedicate this research dissertation to my lovely mother Mrs. AkongoVantorina and to my the late father Mr. Obila Selsio, My grandmother Kasilina Lakore, My nephew Ottober Welborn Odiya, my brothers Abonga Joseph, Akera Bosco, and all friends who encouraged me to go for further studies. Not forgetting Komakech Hannington and Kizito of Invisible Children who played very fundamental roles in my education progress and all those who have wished me well.

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LIST OF ABBREVIATION:

- E -----*Echinococcosis*
- FAO-----Food and Agricultural Organisation
- G1-----Sheep strain
- WHO-----World Health Organisation
- UBOS-----Uganda Bureau of Statistics
- G2-----Goat stain
- DVO-----District Veterinary Officer.
- Psc-----Protoscoleces
- MAAIF-----Ministry of Agriculture Animal Industry and Fisheries.
- CE-----Cystic Echinococcosis
- AE-----Alveolar Echinococcosis
- Kg:-----Kilogram.
- PM-----Post-Mortem

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ABSTRACT:

An abattoir based study was conducted to determine the prevalence of hydatid cyst in sheep and goats slaughtered at Soroti Municipal Abattoir from March to April 2014. A total of 454 animals comprising 294 goats and 160 sheep of both sexes were examined at Postmortem for the evidence of hydatid cyst. The overall infection rate of 33.33% in goats and 42.50% in sheep were observed. The high prevalence could possibly be attributed to continued practice of home slaughtering in the periphery of Soroti Municipality coupled with high number of stray dogs presenting high infection risk. 34.18% male sheep, 41.98% female sheep ($P=0.05$) and 34.52% male goats, 26.98% female goats ($P=0.109$) were infected with hydatid cyst. This could be because both male and female goats share the same grazing condition. And most female sheep are slaughtered at an older age. 20.25% goats, 27.27% sheep aged 0-1 year were infected; 35.63% goats, 40.74% sheep aged 2-3 years and 46.94% goats, 54.54% sheep above 3 years were infected with hydatid cyst. (Goats $P=0.202$, Sheep $P=0.469$). Prevalence of infection was higher in the older animals especially those 3 years and above. This could possibly be because aged animals have longer exposure times to eggs of *Echinococcus granulosus*, in addition to weaker Immunity to combat against the infection. According to Sub-county of origin, Asuret has the highest prevalence of 36.73% in goats, 51.02% in sheep. Followed by Gweri with 24.59% goats, 47.37% sheep infected; Kamuda come third with 43.14% goats and 35.71% sheep infected with hydatid cyst. Arapai has the prevalence of 33.33% in goats and 29.03% in sheep. Statistical analysis revealed no significance difference in prevalence among Sub-counties of Origin ($P=0.272$). It is recommended that public health measures such as control of stray dogs and provision of and strengthening of meat inspection services at abattoirs be encouraged in Soroti District.

CHAPTER ONE: INTRODUCTION

1.1. Background.

Hydatid cyst is a larval stage of a dog tapeworms belonging to the genus *Echinococcus* (family taeniidae) which causes echinococcosis disease (Gottstein and Reichen, 2003). Echinococcosis is a Cosmopolitan helminthozoonosis of medical and economics importance due to the long-term evolution, natural and post-surgical complications as well as public health, economic and social implications it entails (Dumitru et al., 2011, Schantz et al., 1995.) Larval infection (echinococcosis) is characterized by long-term growth of metacestode in the intermediate host such as sheep, horses, cattle, pigs, goats, camels and humans (Fromsa *et al.*, 2011, Bouree, 2001, Craig *et al.*, 2007.)

The four major species of medical and public health importance are *Echinococcus granulosus* (which causes cystic echinococcosis), *Echinococcus multilocularis* (which causes alveolar echinococcosis), *Echinococcus vogeli* and *Echinococcus oligarthrus* (which cause polycystic echinococcosis). Infection with *E. Granulosus* results in the development of one or several litres of lunilocular hydatid cysts in humans (Taha and Bekci, 2012, Abdulahi *et al.*, 2011).

Hydatid cyst develop mainly in the liver (70%), lungs (20%) and 10% of cysts occur almost anywhere in the body (brain, body musculature, wall of the heart, kidneys, orbit of the eye, marrow cavity of bones) (Grosso *et al.*, 2012, Taha and Bekci, 2012). It is more important in developing countries where there is poor sanitation and people live in close proximity with each other and animals especially in nomadic pastoral tribes. Echinococcal cyst (hydatid cyst) is spread by dogs and other canids such as wolves and foxes which are definitive host.

The population of dogs in Uganda is overwhelmingly high estimated at 1.6 million with eastern region having 312010 dogs (UBOS 2008) together with many household involved in goats and sheep rearing in Soroti District increases transmission of hydatidosis. In Soroti District, 11.8% and 50.6% of the households rear sheep and goats respectively. And yet dogs are the definitive host of echinococcal cyst host while goats and sheep are intermediate host making transmission easier.

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