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Pursuing excellence

**FACULTY OF AGRICULTURE AND ANIMAL
SCIENCES**

**DEPARTMENT OF ANIMAL PRODUCTION AND
MANAGEMENT**

FINAL YEAR PROJECT

**ESTIMATION OF COST OF LIVER LOST DUE TO
FASCIOLIASIS IN SOROTI AND KATAKWI DISTRICTS**

By

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**A DISSERTATION SUBMITTED TO THE DEPARTMENT OF ANIMAL
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DECLARATION

I AYESIGAMUKAMA EMMANUEL declare that this dissertation is mine and it has never been submitted in any university or institution for the award of any academic qualification.

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DEDICATION

I dedicate this thesis to my supervisor, examiners, my parents Mrs. Akugizibwe Jessy and Miss. Agondeze Grace, all my brothers Moses, Asaba, Pythagoras and Zechariah not forgetting my fellow students and friends who have supported me in prayers, finance and all other aspects where they have been with me. I also dedicate this thesis to Mildred, thank you so much.

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LIST OF ABBREVIATIONS

AU\$	Australian Dollar
BCS	Body Condition Score
BUAC	Busitema University Arapai Campus
DEL	Direct Economic Loss
KGS	kilograms
UGX	Uganda Shillings
USD	United States Dollar
WHO	World Health Organisation

ABSTRACT

Fascioliasis is a parasitic infection of livestock caused by liver flukes of the genus *Fasciola*. It affects the health and productivity of animals causing economic losses due to liver condemnation and reduced meat quality. More than \$3.2 billion USD per year is lost in the whole world due to Fascioliasis and during post mortem inspections in animals slaughter areas the infested liver with Fascioliasis is the most condemned organ, this requires all measures to reduce these economic losses. This study aimed to estimate the cost of liver lost due to Fascioliasis in Soroti and Katakwi abattoirs of Uganda, where the disease is endemic. A cross-sectional survey was conducted on 246 cattle conveniently selected from Soroti and Katakwi abattoirs. Liver samples were collected at slaughter and examined for the presence and intensity of fluke infestation, the infected liver was weighed on the digital weighing scale and weight was recorded. The cost of liver lost was calculated based on the market price of liver and the weight reduction due to infection. The prevalence of Fascioliasis was 75.7% in Soroti and 47.1% in Katakwi. The cost of liver lost was estimated at 6,776,627million UGX per year for Katakwi and 173,798,400million UGX per year for Soroti. The average economic loss per cattle was 10,274 UGX and 25,607 UGX in Katakwi and Soroti abattoir respectively with the liver weight loss being 37.245kgs and 148.505kgs in Katakwi and Soroti respectively. Cattle aged 2 to 3years had a high infection rate compared to those aged 4years and above, animals originating from Katakwi sub-county had a high infection and economic loss with Anopete sub-county having the lowest in Katakwi and in Soroti, katera sub-county had a high infestation and economic loss while Toroma sub-county had the lowest economic loss. The study concluded that Fascioliasis is a serious economic problem for livestock farmers in the study area and recommended the implementation of effective control measures such as deworming with the appropriate drugs and providing clean water to animal. Further studies should be made to assess the potential and the risks of people being infected by Fascioliasis.

CHAPTER ONE

INTRODUCTION

1.0 General introduction

This chapter includes the background of the study, statement of the problem, main objective of the study, specific objectives, research questions, justification of the study, scope of the study, and significance of the study.

1.1 Background to the study

Fascioliasis caused by *Fasciola* species is found in five continents of the world where Africa is inclusive and the disease is recognized as a neglected human disease by WHO, It's predominantly said to be endemic in developing countries where Uganda is part (Zerna *et al.*, 2021). Consumption of animal proteins provides humans with nine essential amino acids and contributes a relatively high nutrient profile in the diet of humans where meat passed for consumption is inspected and certified with veterinarians who keep records of slaughtered animals (Njoga *et al.*, 2023).

According to Fang *et al.* (2022) Fascioliasis is a foodborne zoonotic parasitic disease that has been identified to cause significant health problems and economic importance affecting most livestock animals more especially cattle and sheep. Two species of *Fasciola* that is to say *Fasciola hepatica* and *Fasciola gigantica* affect livestock though *F. gigantica* is the most abundant species of cattle. However, the two species have been identified for causing severe liver illnesses to both livestock animals and to humans (Othman *et al.*, 2023). *Fasciola* affects the liver organ of animals thus being called liver flukes meaning flukes of the liver (Nyirenda *et al.*, 2019). The liver is a good source of proteins and vitamins such as riboflavin, B12, vitamin A, and copper. It is the largest organ in the body that is believed to be the most preferred due to its softness as reported by (Rassol *et al.*, 2020).

According to Arbabi *et al.* (2018) distribution of Fascioliasis is reported to be in 51 nations in the world, they also urge that it is due to *Fasciola hepatica* which infect a large number of animals. *Fasciola* infects a broader category of animals like cattle, sheep, goats and others both non-

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