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Prevalence, risk factors and financial lose of Bovine fasciolosis in Buee town municipal Abattoir at Sodo Guraghe, Ethiopia

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Keywords

BUI Manucipal Abattoir,
Bovine,
Economic Significance,
Fasciola,
Liver,
Prevalence

Abstract

Fasciolosis is a serious animal health problem in Ethiopia where cattle raising is very important to the local economy**.** In Ethiopia the prevalence of fasciolosis is as high as 83.08% in cattle which results high economic loss due to loss of productivity, mortality, treatment cost. Beside its economic impact human fascioliasis is growing in higher prevalence in low income countries. Therefore, the current study was aimed to determine the prevalence of bovine fasciolosis, its economic impact and factors involved in Bui Municipal Abattoir. Active abattoir survey on randomly selected cattle slaughtered in Bui Municipal Abattoir was conducted from April 2022 to September 2022 during routine meat inspection. During ante-mortem examination details about the health status, species, breeds, age, origins and body conditions of the animals were recorded and unique identification number was given for each randomly selected animal. At post-mortem inspection based on the provided identification number the gall bladder was removed and washed to screen out mature flukes. Each liver visually inspected, palpated and incised. The liver was cut into slices of about 1cm thick and put in a metal trough of warm water to allow mature flukes lodged in smaller bile ducts to escape and then the heads of the flukes were counted. The data was recorded in to Microsoft word excels and imported to SPSS for data management and analysis. Frequency and percentage was used to describe the data and Chi- square test of independence was used to assess the association between the prevalence and the factors. The economic impact of fasciolosis was assessed by using formula provided by Ogunirad*et al.*1980. Out of 450 cattle examined 70 (15.6%) were positive for fasciolosis. Among these, Fasciola hepatica was found to be the most prevalent species 46 (10.2%). The result indicated that Fasciolosis infection has a statistically significant difference ($P<0.05$) in relation to body condition unlike the other factors. Based on the retail value of condemned bovine liver, total annual economic losses from fasciolosis were estimated to be 33696.00 EB per annum. Hence, it may be concluded that bovine fasciolosis is prevalent in study site and it

have great economic impact. Therefore, implementation of control and prevention strategy like, grazing managements, reducing the population of the intermediate host, diagnosis and treating sick animals using anthelmintic, is mandatory

1. Introduction

Ethiopia has a large livestock population in Africa, which is estimated to be around 34-40 million out of which 17% and 12% of cattle and small ruminants, respectively, are found in Ethiopia with the largest livestock in Africa including more than 38,749,320 cattle, 18,075,580 sheep, 14,858,650 goats, 456,910 camels, 5,765,170 equines and 30,868,540 chickens with live stock ownership currently contributing to the livelihoods of an estimated 80% of rural population (CSA, 2016).

Despite the large animal population, productivity in Ethiopia is low and even below the average for most countries in eastern and sub-Saharan African countries, due to poor nutrition, reproduction insufficiency, management constraints and prevailing animal diseases (Biniam *et al*., 2012). Among the livestock health problem, parasitism is major obstacle to the development of the sub-sector (Malone *et al*., 2000). Fasciolosis is one of major parasitic diseases contributing to loss in productivity (Abebe, 1992 ;)

Among many parasitic problems of farm animals, fasciolosis is a major disease, which imposes direct and indirect economic impact on livestock production, particularly of sheep and cattle (Keyyu *et al.,* 2005; Menkir *et al.,* 2007). Fasciolosis is caused by a leaf-shaped flukes whose anterior end is usually prolonged to the shape of cone. They are responsible for wide spread morbidity and mortality in sheep and cattle characterized by weight loss, anemia and hypoproteinemia. The two most important species. *Fasciola hepatica* and *Fasciola gigantica* are the two liver flukes commonly reported to cause fasciolosis in ruminants. The life cycle of these trematodes involves snail as an intermediate host (Walker *et al.,* 2008). The life cycle takes place in intermediate (IH) and definite hosts (DH). Definitive hosts include cattle, sheep, many other ruminants, equidae, swine and rabbits (Taylor *et al* 2007).

The spread of fasciolosis is largely dependent on the ecology of the snails which act as IH and serve as means of transmission to animals. Lymnaeanatalensis, aquatic snails is important for *F. gigantica* in Africa, where as *Lymnaeanatalensis truncatula,* is an amphibian, wide distribution worldwide, and the most common IH for F. hepatica. Adult flukes found in the bile duct, shed eggs into the bile then enter into the intestine to pass outside with feces (Urquhart *et al* 1996). It is caused by two liver fluke species, which are: *Fasciola hepatica* and *Fasciola gigantica.* The geographical distribution of trematode species is dependent on the distribution of suitable species of snails. The genus lymnaea in general and *L. trancatula* and *L. natalensis*in particular are the most common intermediate hosts for *F. hepatica* and *F. gigantica* respectively.

Fasciola hepatica has a cosmopolitan distribution, mainly in temperate zones, while *F. gigantica*is found in tropical regions of Africa and Asia (Sanchez *et al*., 2002). These Losses from parasitic diseases including fasciolosis expected to be high in tropical countries like Ethiopia where strategic and most effective disease control programs are lacking. Therefore, a study on the prevalence and associated risk factors of the disease is crucial before planning and instituting a control program. Several studies have reported the presence and economic significance of fasciolosis in Ethiopia. The prevalence of the disease is known to be relatively high causing considerable economic losses in livestock production. The areas around gurage zone buee town and association areas are generally considered as one of the most affected and endemic area of fasciolosis in the city region, Veterinary practitioners and animals owners complain of huge annual losses from it. However, there are

practically no dependable detailed studies that have been conducted on the prevalence the monthly/seasonal variations in the prevalence rates of the disease and other related parameters so as to design relevant control strategies that will be implemented.

Diagnosis of Fasciolosis may consist of tentative and confirmatory procedures. A tentative diagnosis of fasciolosis may be established based on prior knowledge of the epidemiology of the disease in a given environment, observations of clinical signs, information on grazing history and seasonal occurrence. Confirmatory diagnosis; however, is based on demonstration of fasciola eggs through standard examination of feces in the laboratory; postmortem examination of infected animals and demonstration of immature and mature flukes in the liver (Malone *et al*., 1989).

A review of available literature strongly suggests that fasciolosis exists in almost all parts of the country. It is regarded as one of the major setbacks to livestock productivity, incurring huge direct and indirect losses in the country. Bui municipal abattoir is one of the areas where the environmental conditions and altitude is conducive for the occurrence of fasciolosis. However, little information is available about its prevalence and economic significance in the study area.

Therefore, the objectives of this study were;

To study the prevalence of bovine fasciolosis
To assess some risk factors of bovine fasciolosis
To assess direct and indirect economic losses caused by Fasciolosis in the Bui municipal abattoir

2. Materials and Methods

2.1 Study area

The study was conducted in Bui Municipal Abattoir, from April 2022 to September 2022, Bui is located in the south part of Ethiopia which extends from 8.32 norths and from longitude 38.55 easts and is found 103 kilometers south of Addis Ababa, in the southern extreme of Ethiopia. Topographically, the area consist of variety of land features, generally, flat land with gentle slope compresses 40% of the town and ups and down cover about 30% of the area while valley and hilly topography makes up 23% and 7% of respectively (SWARDO, 2022).

2.2 Study population

Post-mortem examination and sample collection was conducted on indigenous (local) slaughtered at Bui abattoir. All Age group and both sex were included in the study population. Cattle slaughtered in the abattoir were brought from different locations including from, Kela, Butajira and Suten districts.

2.3 Sample Size determination

Since there was no previous study in Bui Municipal Abattior district, to establish the prevalence and economic significance of bovine fasciolosis, the sample size was determined by taking the prevalence of 50% fasciolosis using the formula given by (Thrusfield, 2005).5% level of precision and 95% confidence level were used to calculate the minimum sample size as below.

Thrusfield (2005). n= (Zα/2)2 p expected (1-pexpected)

Where;
n = minimum number of sample size,
Z0.025 from table = 1.96
d = absolute precision
p = expected prevalence
Accordingly 384 animals were supposed to be sampled but in order to increase the precession a total of 450 study animals were used

2.4 Study design

A cross-sectional study was conducted from April 2022 to September 2022 to determine the prevalence of bovine fasciolosis and its economic loss due to liver condemnation by using both post-mortem examination of liver from each

slaughtered animal and using laboratory examination employing sedimentation technique on feces collected directly from the rectum of live animals (cattle).

2.5 Sampling method

Simple random sampling technique was used to select animals slaughtered in the abattoir. The animals were selected at the entrance to the abattoir identified by their owner's name and recorded accordingly on a format prepared for this purpose. According to the above formula a total of 450 animals were included in the study.

2.6 Sampling procedures

2.6.1 Post mortem Examination:

The liver of each slaughtered animal was carefully examined by visualization and palpation of the entire organ that was followed by transverse incision of the organ to check for the presence of adult flukes. Available adult flukes were collected in a universal bottle containing 10% formalin and then transported to the laboratory for species identification.

2.6.2 Coprological examination:

Live animal examination was conducted on fecal samples collected directly from the rectum of cattle into a universal bottle containing 10% formalin and transported to Bui Sodo Laboratory for examination. Sampling was carried out at random with inclusion of age, sex, and origin and body condition of animals in the abattoir from those districts. The fecal samples were kept at 4 ^{0}c until all are processed and examined. Sedimentation technique was used to detect the presence of absence of fluke eggs in the fecal sample collected.

2.7 Economic loss assessments:

2.7.1 Direct loss

Generally, all infected livers with fasciolosis were considered to be unfit for human consumption and if any liver was infected by *Fasciola* at the Bui Manucipal Abattoir, it was totally condemned. Economic losses were calculated based on condemned livers due to fasciolosis. In the study abattoir, the average annual cattle slaughtered rate was estimated to be 1800 while mean retail price of bovine liver in Bui Abattoir was 120 ETB. The economic loss due to condemnation of organ was assessed using the following formula direct loss (Dl) = NAS *CPF*PHF NAS -average number animals slaughtered annually PHF-percentage of liver condemnation due to bovine facsiolosis CPF - current average price of liver

2.7.2 Indirect loss

The estimatedFasciolosis in cattle results 10% carcass weight loss due to bovine fasciolosis the average carcass weight of Ethiopian zebu slaughtered cattle was 126kg and the carcass value of beef during the study period was about 450 ETB /kg. The annual loss from condemned liver was calculated according to mathematical computation using the formula set by (Ogunrinade and Adegoke, 1982).

$$ALC = CSR \times LC \times P$$

Where: ALC = Annual loss from liver condemnation,
CSR = mean annual cattle slaughtered at Bui abattoir,
LC = mean cost of one liver in Bui abattior
P = prevalence of bovine fasciolosis at Bui abattoir

2.8 Data management and analysis

The data which were recorded during the study period were entered into Microsoft Excel sheet. Data were summarized and analyzed using statistical package for social sciences (SPSS) version 20 computer program. The proportions of Fasciolosis infection in samples from the abattoir were computed. The Pearson's Chi-square (X2) test at a significance level of 5 % and 95% CI was used to determine the differences in the prevalence of Fasciolosis infection among

different sexes, breed, origin, between ages and among body conditions of cattle. A 5% significant level was used to determine the differences in the prevalence of Fasciolosis infection between different sexes, ages, breed, and origin and among body conditions. The difference was considered as statistically significant if the *P-value* was less than 0.05.

3. Results

3.1. Characteristics of study population

During the study period almost all animals that were slaughtered in the study abattoir were male adult and local breeds. Sex and breed factors were not considered in any of the data analysis. Out of the total animals, the highest age group was recorded in adults 231 (51.3%). Regarding the body condition 21 (4.7%), 226 (50.2%) and 203 (45.1%) were poor, moderate and good respectively. During the study period at Bui municipal abattoir most of the animals were brought from Kela 290 (64.4%) followed by Butajira 99 (22%) 61 from Suten (13.6%). (**Table 1**).

Table 1: Prevalence and distribution of bovine fasciola species with respect to animal origin, body condition and age at Bui municipal Abattoir.

Variable	Frequency	Percentage (%)
Age		
Adult	231	51.3%)
Old	219	48.7%
Body condition		
Poor	21	4.7%)
Moderate	226	50.2%)
Good	203	45.1%
Origin		
Kela	290	64.4%)
Butajira	99	22%
Suten	61	13.6%)

3.2. Prevalence of Fasciola and Fasciola type

From the total livers examined 70 (15.6%) were positive liver fluke. Of those F. hepatica was found to be the commonly encountered Fasciola species with a prevalence of 46 livers (10.2%) (**Table 2).**

Table 2: Overall Prevalence of Fasciolosis in cattle slaughter at Bui Municipal Abattoir,

Variable	Frequency	Percentage (%)
Status of infection	70	15.6%
Positive	380	84.4%
Negative		
Fasciola type		
Fasciola hepatica	46	10.2%
Fasciolagigantica	24	5.4%

3.3 .Age Body condition and origion as a factor for Fasciola prevalence

Fasciola infection on the basis of age which was categorized as adult and old age was analyzed. According to the result, out of the total adult 231 (51.3%) animals 30 (13%) were positive for fasciolosis. Whereas out of the animals which grouped under old age 220 (48.7%), 40 (18.7%) were positive for fasciolosis. The result of the present study indicated that the prevalence of Fasciola infection has not significant difference (P>0.05) among animals with different age group (Table 3).

Table 3: Age as a factor for Fasciola prevalence at Bui Municipal Abattoir

Variable	Count (%)	Positive (%)	Negative (%)	X2-value	p-value
Age					
Adult	230(51.3%)	30(13.1%)	200(86.9%)	2.782	.095
Old	220(48.8%)	40(18.2%)	180(81.8%)		

Fasciola infection on the basis of body condition score which was graded as good, medium and poor body condition was analyzed. According to the result, out of the total poor body condition graded animals 14 (66.7%) were positive for fasciolosis. Whereas out of the animals which score good body condition 203 (40.1) 21 (10.3%) were positive for fasciolosis. The result of the present study indicated that the prevalence of Fasciola infection has significant difference (P<0.05) among animals with different body conditions (Table 4).

Table 4: Prevalence of Fasciolosis in different body condition Bui

Variable	Count (%)	Positive (%)	Negative (%)	X2-value	p-value
Body condition					
Poor	21(4.7%)	14(66.7%)	7(33.3%)	45.438	.000
Moderate	226(50.2%)	36(15.9%)	190(81.1%)		
Good	203(45.1%)	20(9.8%)	183(90.2%)		

Fasciola infection on the basis of origin where the animals were bought was analyzed to assess the prevalence of fasciolosis at Kela, Butajira and Suten. According to the result, out of the total animals bought from Kela, Butajira and Suten 40 (13.8%), 23 (23.2%) and 7 (11.1%) were positive for fasciolosis respectively. The result of the present study indicated that the prevalence of Fasciola infection has no significant difference (P>0.05) among animals with different origin (Table 5).

Table 5: Prevalence of Fasciolosis in different origin (districts) at Bui Abattoir,

Variable	Count (%)	Positive (%)	Negative (%)	X2-value	p-value
Origin					
Kela	290(64.4%)	40(13.8%)	250(86.2%)	5.325	.070
Butajira	99(22%)	23(23.2%)	76(76.8%)		
Suten	61(13.6%)	7(13.1%)	53(86.9 %)		

3.4 Economic loss due to organ condemnation

The direct financial loss was resulted from liver condemnation due to Fasciolosis. Generally all infected livers with Fasciolosis were unfit for human consumption. In the study 70 livers were condemned as a result of the disease corresponding to an estimated loss (direct loss) about 8400Ethiopian birr from 450 cattle inspected. The average annual cattle slaughtered rate was estimated to be 1800 while mean retail price of bovine liver in Bui town was 120.00EB and prevalence of Fasciolosis in Bui abattoir was found to be 15.6%. Therefore the estimate annual loss from organ (liver) condemnation is calculated according to the formula given by (Oguniradee*t al*.1980).

Dl) = NAS *CPF*PHF (1800×120×15.6%)

Therefore, the annual direct loss due to Fasciola was estimated around 33696 EB annually.

3.5 Economic loss due to carcass weight loss

Indirect financial is economical loss due to carcass weight reduction as a result of Fasciolosis. From 450 inspected animals 70 were identified as positive in the study abattoir. According to Mari H., (1989). Fasciolosis in cattle results 10% carcass weight loss due to bovine Fasciolosis was 1,592,136.00EB EB per annum during the study period. In the study area the average price of 1 kg beef was 450 EB. ACW= (1800×126×10%450×15.6%)

Therefore, the total annual financial loss due to bovine Fasciolosis in the abattoir was the summation of the loss from organ (liver) condemnation (direct loss) and carcass weight reduction (indirect loss) which estimated around 1,625,832.00 EB. This indicates that about 97.9% of the overall estimated loss was found to be attributable to carcass weight reduction while only 2.1% of the loss accounts from organ condemned.

4. Discussion

Bovine fasciolosis exists in almost all regions of Ethiopia. However, the prevalence, epidemiology and Fasciola species involved vary with locality that were caused by the variation in the climate and ecological conditions such as altitude, rain fall, temperature, livestock management system (Shiferaw *et al*., 2011). The prevalence of fasciolosis in Ethiopia varies from 11.5% in low land area to 87% in high land area. The low lying areas in the high lands have poor drainage, which favors the development of parasites (Hylegebriel *et al.,* 2012).

The overall prevalence of Bovine Fasciolosis at bui abattoir was around 15.6% which revealed lower as compared with prevalence's reported by Wondosen, A. (1990) studied at Arsi Administrative Region and Ademin, and Z. (1994) studied around Ziway region, who reported prevalence of 53.52% and 56.8 % respectively. Other prevalence rates were also noted in different parts of Ethiopia, such as 48.53% at Jima municipal abattoir (Tadele, 2007), 45.25% at Hawassa municipal abattoir (Shiferaw *et al*., 2011), 41.41% at Woreta municipal abattoir (Biniam *et al*., 2012), 39.8% at HashimNur's Ethiopian livestock and meat export industrialized abattoir in DebreZeit (Yemisrach, 2012), 25.2% at Dessie municipal abattoir (Ephrem *et al*., 2012), 22.76% at Mekele municipal abattoir (Hylegebriel *et al*., 2012), 21.5% at Adigrat municipal abattoir , 20.3% at Addis Ababa municipal abattoir (Kassaye *et al.,* 2012), 45.3% at the BahirDar municipal abattoir (Ayalew, 2013), 24.44% at Dire Dawa municipal abattoir (Mebrahatu, 2013), 21.9% at Nekemte municipal abattoir (Alula *et al*., 2013), 20.8% Bedelle municipal abattoir (Yosef *et al.,* 2014). There were also other studies conducted in other different parts of Ethiopia in which the prevalence rates were lower than that of the current study. These include13.9% at Adawa municipal abattoir (Mihreteab *et al*., 2010), 15.2% at Addis Ababa municipal abattoir (Kassaye *et al*., 2012) and 14.1% at Nekemte municipal abattoir (Alula, 2013).This could be due to difference in altitude, topography and

weather conditions or creation of awareness to the livestock owner how to keep their cattle healthy, protect their cattle from reaching infected area, keeping pastures dry and eliminating surrounding contaminated vegetation which could be a suitable medium for Fasciola infection and the use of antihelminths to treat infected animals by veterinary health technicians.

Postmortem examination on the 70 Fasciola infected livers of current results indicated that the prevalence of *F. hepatica* (10.2%) was higher than that of *F. gigantica* (5.4%) infection.

Similar Study conducted at Jimma municipal abattoir reported 60.3% of liver harbored *F.hepatica,* 23.85% of liver harbored *F. gigantica* species was recorded by Tolosa and Worku (2007). The high prevalence of F. hepatica may be associated with the presence of favorable ecological biotypes for its snail vector *Lymnaea truncatula.* In support of the present study, Gebretsadik *et al*. (2009) reported that 56.42% of cattle were infected with Fasciola hepatica and 9.17% with *Fasciola gigantica.* Yilma and Malone (1998) indicated that *Fasciola gigantica* in Ethiopia is found at altitudes below 1800 meters above sea level. While Fasciola hepatica is found at altitude of 1200- 2560 meters above sea level. Mixed infections by both species can be encountered at 1200-1800 meters above sea level. According to Yilma and Malone (1998), such discrepancy is attributed mainly to the variation in climatic and ecological conditions such as altitude, rainfall and temperature as well as livestock management system.

Prevalence of bovine fasciolosis was statistically analyzed on the basis of body condition score to determine the impact of the disease in animals with different body condition scores. In the present study, animals with poor body condition were associated with higher infection than animals with medium and good body condition. Similar finding was also reported by Bekele *et al*. (2010). This implies that fasciolosis causes emaciation of the animals. Low body score was associated with liver fluke infection. However, other than fluke infection, inadequate nutrition and concurrent infection of the animals with other bovine pathogens could enhance the effects of the flukes for the emaciation of the animals The result of the present study indicated that proportion of Fasciolosis has significant difference ($p<0.05$) in relation to body condition of the animals.. The current prevalence of fasciolosis based on body condition of the livestock were 15.9%)%,10.3%) %, and 66.7% for medium, good, and poor body respectively which was lower to prevalence rates registered at Assela municipal abattoir being: 75% for poor body condition, 49% for medium body condition, and 40% for good body condition (Shiferaw *et al*., 2011), whereas at Mekelle municipal abattoir for poor, medium, good body conditions were 43.7%, 18.4%, and 8.75% respectively (Hylegebriel *et al.,* 2012)

Fasciolosis causes economic losses in livestock as the result of mortalities, abortions, retarded growth, reduced meat and milk production, condemnation of infected livers and emaciated carcass (Kithuk *et al.,* 2002). The liver condemnation and carcass weight loss due to fasciolosis was computed based on the information obtained during postmortem examination and interview.

From different butchers of meat retailer about the current price of one liver and one kilo gram of meat. The analysis was done for liver condemnation and body weight reduction due to Fasciola infection. The direct financial loss incurred during this study as a result of condemnation of liver, was estimated to be about 33696.00EB per annum and indirect economic loss due to carcass weight reduction /indirect loss was estimated to be 1,592,136.00EB Bper annum. Therefore the total annual financial loss due to fasciolosis in the study abattoir was the summation of loss from organ (liver) condemnation and carcass weight reduction, which was equal to 1,625,832.00 EB which is higher compared to other financial losses reported by Wondwossen in Arsi (1990) reports 159, 704 EB and Adem in Ziway (1994) reports154, 188 EB and Daniel in Dire Dawa, (1995) reports 215, 000 EB.

5. Conclusion and Recommendations

The result of the present study revealed an overall prevalence of bovine Fasciolosis was 15.6% in Bui Slaughter House. It was alow prevalence of bovine fasciolosis was obtained when compared with prevalence reported by different researchers at different area. The dominant Fasciola species revealed was fasciola hepatica. The current study also indicated that significant prevalence of bovine fasciolosis resulting in significant financial loss due to liver condemnation and carcass weight reduction in the study abattoir were noted. The financial loss incurred due to liver condemnation averages 93.6 and 33696 EB Ethiopian birr per day and annum respectively. The result of this study indicated that fasciolosisis an economically important disease causing a direct and indirect financial loss in the study area.

Therefore based on the above conclusion the following recommendations are forwarded: Further study should be conducted on the epidemiology of the disease biology and ecology of intermediate host snail in order to foster planning and implementation of suitable presentation and control strategies. Modernizations of traditional manage mental practice through raising the awareness for livestock owners. The low lying well marsh pastures should not be grazed by animals particularly during dry season of the year to reduce infection. Strategic anthelminthic treatment with appropriate flukicidal drugs should be practiced two times a year after the end of dry season and after the end of rain season. The huge amount of financial loss needs serious attention in the prevention and control of Fasciolosis in the study area.

6. References

Abebe, R. (1992). Fasciolosis Clinical occurrence, Coprological abattoir and snail survey in around Wolliso, DVM thesis, Addis Ababa University, Faculty of Veterinary Medicine DebreZeit, Ethiopia.

Addis G., Adina, K. and Jemberu A. (2015): Prevalence and economic importance of bovine fasciolosis in Dembi Dolo municipal abattoir, south-western Ethiopia. International Journal of Agriculture and Veterinary Sciences. 1**(1):**33-34.

Adem A. (1994): Prevalence of bovine and ovine Fasciolosis: A preliminary survey around Ziway region, Shoa, Ethiopia. DVM Thesis, Faculty of Veterinary Medicine, Addis Ababa University, Debre Zeit, Ethiopia.

Alula P, Addisu K. and Amanuel W. (2013): Prevalence and economic significance of bovine fasciolosis in Nekemte municipal abattoir, Ethiopia. JVMAH. 5**(8):** 202-205.

Ayalew S. and Endalkachew N. (2013): Prevalence and risk factors of bovine and ovine fasciolosis, and evaluation of direct sedimentation sensitivity method at BahirDar municipal abattoir, Ethiopia. Ethiop Vet J. 17**(2):**1-17.

Bekele, M., Haftom, T and Yehenew, G. (2010): Prevalence Bovine fasciolosis and its economic loss due to liver condemnation at Adwa municipal abattoir, North Ethiopia. Ethiopian Journal of Agricultural Science and Technology. 1:39-47.

Biniam T., Hanna A., and Sisay G. (2012): Study on coprological prevalence of bovine fasciolosis in and around Woreta, Ethiopia. JVMAH. 4**(7):** 89-92.

Central Statistical Agency (CSA) (2013): The Federal democratic republic of Ethiopia central statistical agency, agriculture in figure key finding of the 2010/11-2012/13 agricultural surveys for all sectors and seasons' country summary, FDRE, CSA Addis Ababa, Ethiopia.

CSA (2016) Livestock and Livestock Characteristics, Agricultural sample Survey. Addis Ababa, Ethiopia. Statistical Bulletin 2(**583):** 9-13.

Dachas, T., Antench W. and Dachas F. (2012): Prevalence, Gross Pathological Lesion and Economic Losses of Bovine Fasciolosis at Jimma Municipal abattoir, Ethiopia. Journal of Veterinary Medicine and Animal Health. 4(**1**):6-11.

Daniel, F. (1995): Economic Importance of Organ Condemnation Due to Fasciolosis and Hydatidosis .in Cattle and Sheep Slaughtered at Dire Dawa Abattoir. Ph.D. Thesis, Faculty of Veterinary Medicine, Addis Ababa University, Debrezeit.

De-Lahunta A. and Hable R.E. (1986): Applied veterinary anatomy, W.B. Saunders Company, USA. 17

Ekenma K. (2015): Bovine Fasciolosis, a Review, Journal of Agriculture and Veterinary Science. (IOSR-JAVS). 8:23-26.

Ephrem B., Wassie M. and Abadi A. (2012): Prevalence and economic losses of bovine fasciolosis in Dessie municipal abattoir, Ethiopia. Idosi.ejb. 4(2):53-59.

FAO, (1993). Ethiopia livestock sector development project Preparation report volume 1, FAO. Rome Italy. 51.

Food and Agriculture Organization (FAO) (2003): Diagnostic Manual on Meat Inspection for Developing Countries.

G. M. Urquhart, J. L. Amour, A. M. Dunn, and F. W. Jennings, Veterinary Parasitology, Oxford Blackwell Publishing, Hoboken, pp. 103–112, 2 edition, 1996.

Gebretsadik B., Kassahun B. and Gebrehiwot T. (2009): Prevalence and economic Significance of fasciolosis in cattle in Mekelle Area of Ethiopia. Tropical Animal Health and Production. 41(7):1503- 1504.

Hammond J. A. and Sewell M. H. (1974): Flotation onto sellotape (demonstration), Transactions of the Royal Society of Tropical Medicine and Hygiene. 66-547.

Haymanot A. (1990): Prevalence survey of Bovine Fasciolosis in Eastern Hararghe Administrative Region. DVM Thesis, Addis Ababa University, Faculty of Veterinary Medicine, DebreZeit, Ethiopia.

Hunter G., Strickland G. and Magill A. (2000): Hunter's tropical medicine and emerging infectious diseases, 8th Ed.

Hylegebriel T., Tadesse D., and Etsay K. (2012): Prevalence of bovine fasciolosis and its associated risk factors in Mekelle municipal abattoir, Ethiopia.

International livestock research institute (ILRI) (2009): Management of vertisols in Sub-Saharan Africa, Proceedings of a Conference Postmortem differential parasite counts FAO corporate document repository. In J.P. Dalton (Ed.), Fasciolosis, Wallingford, UK: CABI Publishing. 31-46.

J Drylands. Ibrahim, Wasihun P. and Tolosa T. (2009): Prevalence of Bovine Fasciolosis and Economic Importance Due To Liver Condemnation at Kombolcha Industrial Abattoir, Ethiopia. The Internet Journal of Veterinary Medicine. 8:1

J. B. Malone, R. Gommes, J. Hansen et al., "Geographical information system on the potential distribution and abundance of F. hepatica and F. gigantica in East Africa based on food and agriculture organization data bases," Veterinary Parasitology, vol. **78,** no. 2, pp. 87–101, 1998.

Kassaye A., Yehualashet N., Yifat D. and Desie S. (2012): Fasciolosis slaughtered cattle in Addis Ababa abattoir, Ethiopia. Glob Vet. 8(2):115-118.

Keyyu, JD, Kassuku, AA, Msalilwa, LP, Monrad, J and Kyvsgaard, NC. 2006. Cross-sectional prevalence of helminth infection in cattle on traditional, small-scale and large-scale dairy farms in Iringa district, Tanzania. Veterinary Research Communications 30: 45- 55.

Kithuk A., Maing I., Njeruh I. and Ombu I. (2002): The prevalence and economic importance of bovine fasciolosis in Kenya-an analysis of abattoir data, Kenya. Onderstepoort. J Vet Res. 69:255 262.

M. A. Taylor, R. L. Coop, and R. L. Wall, Veterinary Parasitology, Oxford Blackwell Publishing, Hoboken, pp. 85–87, 3 edition, 2007.

Mari H. (1989): Body conditions scoring, as of cattle in Ethiopia MOA. 18

Mebrahatu G., Beka K. (2013): Prevalence and economic significance of fasciolosis in cattle slaughtered at Dire Dawa municipal abattoir, Ethiopia. J Vet Adv. 3(12):319-324.

Menkir, MS, Uggla, A and Waller, PJ. 2007. Prevalence and seasonal incidence of nematode parasites and fluke infections of

sheep and goats in eastern Ethiopia. Tropical Animal Health and Production 39(**7**)**:** 521-531

Mihret T., Samuel D. and Addis G. (2015): A Review on Ruminant Fasciolosis, Open Access Library Journal 2: e1655 (http://dx.doi.org/10.4236/oalib.1101655)

Mihreteab B., Haftom T., and Yehenew G., (2010): Bovine fasciolosis: prevalence and its economic loss due to liver condemnation at Adwa municipal abattoir, North Ethiopia. EJAST. 1(1):39-47.

Mugugeta S., Begna F. and Tsegaye E. (2011): Prevalence of Bovine Fasciolosis and Economic Significance in and Around Assela. Global Journal of Medical Research. 11:0975-5888.

Mulualem E. (1998): Epidemiology of bovine fasciolosis in weredas of South Gonder administrative zone bordering Lake Tana. Eth J Vet. 2:1-14.

Mungube E.O., Bauni S.M., Tenhagen B.A., Wamae L.W., Nginyi J.M. and Mugambi J.M. (2006): The Prevalence and Economic Significance of Fasciolagigantica and Stilesia hepatica in Slaughtered Animals in the Semi-arid Coastal Kenya. Tropical Animal Health and Production. 38:475-483.

Nicholson M. J. and Butterworth M. H. (1986): A guide to condition scoring of zebu cattle. International Livestock Center for Africa-ILCA, Addis Ababa, Ethiopia.

Ogunrinade A. and Ogunrinade B.I. (1980): Economic Condemnation Due to Fasciolosis and Hydatidosis importance of bovine Fasciolosis in Nigeria. Trop. Anim. 12:155-160.

Shiferaw M., Feyisa B., Ephrem T. (2011): Prevalence of bovine fasciolosis and its economic significance in and around Assela, Ethiopia. Glob J Inc. 11(3):1.

Ogunrinade, A and Adegoke, GO. 1982. Bovine fascioliasis in Nigeria. Inter current parasitic and bacteria

Sánchez-Andrade, R.; Paz-Silva, A.; Suárez, J.L.; Panadero, R.; Pedreira, J.; López, C.Influence of age andbreed on naturalbovinefasciolosis in an endemic area (Galicia, NW Spain). Vet. Res. Commun. 2002, 26, 361–370. [CrossRef] [PubMed]

Solomon W. and Abebe W. (2007): Effects of a strategy antehelmtic treatment intervention bovine fasciolosis. A conducted in facilities in endemic area in north western Ethiopia. Vet. J. 11(2):59-68.

Soulsby E.J.L. (1986): Helminthes, Arthropods and protozoa of Domesticated animals' Seventh edition BilliereTindall, London UK. 40-52. Tadele T., Worku T., (2007): The prevalence and economic significance of bovine fasciolosis at Jima abattoir, Ethiopia. Inter J Vet Med, 2007. 3(2):201-209.

SWARDO (2021). Sodowereda animal resource and development office: annual basic livestock data for 2021 report, SNNPR, Buee..

T. Binyam, A. Hanna, and G. Sisay, "Study on coprological prevalence of bovine fasciolosis in and around woreta, Northwestern Ethiopia," Journal of Veterinary Medicine and Animal Health, vol. 4, no. 7, pp. 89–92, 2012.

Thrusfield M. (1995): Veterinary Epidemiology second edition, university of Edinburg, Black well science. 180-188. 19

Thrusfield, M. 2005. Veterinary Epidemiology second edition, University of Edinburgh, Black well science.

Tolosa T. and Tigre W. (2007): The prevalence and economic significance of Bovine fasciolosis at Jimma Abattoir, Ethiopia. The Internet Journal of Veterinary Medicine. 3(2).Wondosen A. (1990): Prevalence of Bovine Fasciolosis in Arsi Administrative Region, DVM Thesis, Addis Ababa University, DebreZeit, Ethiopia.

Walker, SM, Makundi, AE, Namuba, FV, Kassuku, AA, Keyyu, J, Hoey, EM, Prodohl, P, Stothard, JR and Trudgett, A. 2008. The distribution of Fasciola hepatica and Fasciolagigantica within southern Tanzania-constraints associated with the intermediate host. Parasitology 135(4):495-503.47

Yemisrach A. and Mekonnen A. (2012): An abattoir study on the prevalence of fasciolosis in cattle, sheep and goats in DebreZeit Town, Ethiopia. Glob Vet... 8(3):308-314.

Yilma J.M. and Malone J.B. (1998): A geographic information system forecast model for strategic control of fasciolosis in Ethiopia. Vet. parasitol. 78(2):103-127.

Yosef M., Yosef D. and Nuraddis I. (2014): Prevalence of bovine fasciolosis in and around Bedelle District, Ethiopia. ActaParasitol Glob. 5(2):83-86.

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