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Research Article

Major Cause of Organ Condemnations and Its Economic Significance in Cattle Slaughtered in Nekemte Municipal Abattoirs, East Wollega, Ethiopia

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Abstract

A cross-sectional study was carried out from September 2013 to February 2014 to identify the major cause of organ combination, and associated threat factors and estimate direct economic losses attributed to the condemned organ in cattle slaughtered at Nekemte Municipal abattoir, western Oromia, Ethiopia. Before slaughter, cattle were subordinated to anti-mortem examinations to identify physical abnormalities and gross pathological lesions. During the ante mortem examination, in 71 (18.5%) cattle, colourful types of abnormalities were detected including; Bruise (7.8), localised lesion (3.4), brand (2.1), lameness (1.3%), lacrimation (1.04), nasal discharge (1.6), and blindness (1.3). Postmortem examination revealed that 115 (29.9%) livers, 70 (18.2%) lungs, 2 (0.52%) hearts 7 (1.8%) kidneys, and 5 (1.3%) spleen were condemned due to various causes. Fasciolosis (29.9%) was the main cause of liver combination followed by hydatid tubercle (4.9) and cirrhosis (3.9), independently. The major causes of lung infection were hydatid cysts, pneumonia, and emphysema accounting for 4.9, 5.2, and 3.9, independently. Hydronephrosis and pericarditis were the major causes of kidney and heart condemnation with rates of 1.3 and 0.52, independently. Organ combination shows significant differences ($P < 0.05$) with age group, cattle origin, and body condition status. The total financial loss estimated in this study, due to organs condemned was 117845 ETB (Ethiopian Birr) (6105.96 US Dollar) per year. Generally, this study showed that hydatidosis and fasciolosis are important complaint problems in cattle in the study area.

Keywords

Abattoir, Cattle, Economic Loss, Ethiopia, Nekemte, Organ Commination

1. Introduction

The livestock sector is largely dynamic, contributes 40% of the global value of agrarian affairs, and supports nearly a billion people's livelihoods and food security [54]. Beyond their direct part in generating food and income, the livestock is a precious asset, serving as a store of wealth, collateral for credit, and an essential safety net during times of extremity [3].

In Ethiopia Livestock product is an integral part of the agrarian system. The livestock subsector accounts for 40 of the agrarian gross domestic product GDP (Gross domestic product) and 20% of the total gross domestic product without considering other benefactions like traction power, fertilizing, and means of transport [5]. Livestock and their products are

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the major foreign exchange earnings. It was only alternate to coffee; with hides and skins contributing the most. Still, presently, the overall livestock product constraints in Ethiopia are feed shortages, animal conditions, the inheritable eventuality of indigenous livestock, and lack of marketing structure and water crunches [33, 6]. Also, each time a significant loss results from the death of creatures, inferior weight gain, and commination of comestible organs and corpse at bloodbath. This product loss to the beast assiduity is estimated at further than 900 million US Dollar annually [2, 23].

The mainly causes of organ commination during posthumous are conditions forming from spongers, bacteria, and contagious conditions. spongers in the tropics are responsible for far lower losses to the meat assiduity than other conditions, like numerous other tropical countries of Africa, it's well known that parasitic conditions are among the major factors responsible for the low productivity of beast in Ethiopia. These infections not only beget clinical conditions and mortalities but also beget profitable losses through product losses and the combination of specific organs at bloodbath [30].

Monitoring and other conditions at bloodbath have been conceded as one system of determining the herd's complaint status; still, this information source is not completely employed internationally [41] particularly when determining the degree of mortal exposure to specific zoonotic conditions and calculating the fiscal consequences of organ examination [29], [16]. More than 300 abattoirs in the area slaughter/bloodbath primarily cattle and, sometimes, lamb for original consumption. With varying capacities and slaughterhouses, the abattoirs are spread around the nation. Large figures of cattle are slaughtered annually by the Addis Ababa Abattoir Enterprise, Adama, Burayu, Sululta, Lege Dadhi, and Hawasa external abattoirs [15].

The primary end of the abattoir is to produce healthy meat, wholesome and clean products safe for mortal consumption [15]. Either, abattoirs give information on the epidemiology of conditions on beasts, to know to what extent the public is exposed to certain zoonotic conditions, and to estimate fiscal losses incurred through a combination of affected organs and cadavers [28].

More specifically, ante-mortem examination attempts to avoid the preface of clinically diseased creatures in slaughterhouses and also serves to gain information that will be useful in making sound posthumous examination [52, 27]. As meat is the main source of protein for the population, it should be clean and free from conditions of particular significance to public health as tuberculosis, hydatidosis and fascioliasis among others [48].

Both ant mortem and post mortem abnormalities beget organ and carcass condemnation of beef in general and Ethiopia in particular. The main reported causes of whole corpse condemnation in Ethiopia were poor bleeding, abscess, adhesion, TB, pneumonia, cysticercus bovis, bruising, and hydatid cyst while cadaver bruising, poor bleeding, contamination, and adhesion were the main causes of partial condemnations [37].

Colorful experimenters have accepted studies at abattoirs and checks conducted to determine the frequency and profitable significance, and cause of meat/ corpse commination in Ethiopia. Important attention has been given to the parasitic cause of organ commination. These are annually to be a major profitable and public health significance in meat examination [29]. Indeed though the spongers have a major profitable and public significance, there was spare information regarding the issue of organ commination and parasitic zoonosis in the study area. Thus, to fill these gaps, this study was conducted with the following objects.

1) To assess the significance of spongers as a cause of organ combination in cattle slaughtered at the Nekemte abattoir.
2) To determine the implicit threat factors associated with organ condemnation in the study area.
3) To estimate direct profitable loss attributed to condemned organs of cattle slaughtered in the study area.

2. Materials and Methods

2.1. Study Area

Study Area

The study was conducted in Nekemte Municipal abattoir from September 2013 to February 2014. Nekemte was found in the East Wollega zone, Oromia, Ethiopia. It's located 331 km west of Addis Ababa at latitude and longitude of 90 ° 5' N and 360°33'E, singly with an elevation of 2,088 measures above ocean position. The minimum and maximum periodic downfall and quotidian temperature ranges are between 1450 to 2120 mm and 15 to 27 ℃, singly [22]. (Figure 1. Map of the study area).

2.2. Study Animals

The animals used in this study were all healthy local (zebu) breed cattle originating from neighboring provinces of (Digga, Angar Gute, Gidda Ayyana, and Sasigga District), and the Nekemte Town area slaughtered at the municipal abattoir. Animals were transported to the abattoir by vehicle and by foot overland.

2.3. Study Design

Study Design

A cross-sectional study design was employed from September 2013 to February 2014 to assess the cause of organ condemnation and to estimate direct profitable losses attributed to condemned organs in cattle slaughtered at the Nekemte Municipal abattoir.

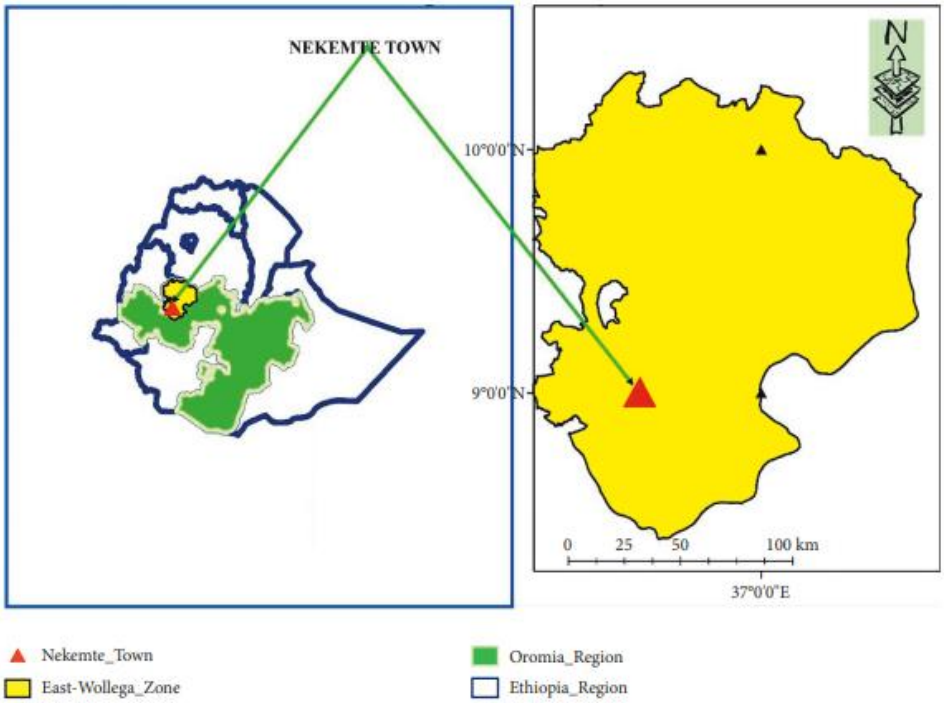

Figure 1. *The map of the study area.*

2.4. Sample Size Determination

The required sample size was calculated based on the expected prevalence of 50%, absolute desired precision of 5%, and a confidence level of 95% according to the formula provided by Thrusfiled [55] as follows:

$$n = \frac{1.962\ Pexp\ (1-Pexp)}{(d)^2}$$

Where: n = required sample size;
exp = expected prevalence:
d = desired absolute precision.

$$n = \frac{1.962 \times 0.5 \times (1-0.5)}{(0.05)^2} = 384$$

Thus, a total of 384 cattle were randomly selected at the abattoir in lairage.

2.5. Data Collection Methods

2.5.1. Ante Mortem Examination

A regular visit was made three days per week to Nekemte abattoirs during the study period from September 2013 to February 2014. Cattle were examined at the lairage before slaughter to determine their age, sex, physical condition score, provenance, and any anomalies they may have had. Based on tooth eruption trends, two traditional age groups young 2 to 6 years and adults >6 years were created by Hagos, [26]. According to the approach described by Nicholson [40] the body condition of the cattle was scored and divided into three categories: poor, medium, and good.

2.5.2. Post Mortem Examination

The organs of randomly selected cattle were examined by visual inspection, palpation, and incision. Organs of each slaughtered animal infected with a hydrated cyst, fasciolosis, cysticercosis, and other causes were identified systematically following the standard routine post-mortem inspection procedure. Pathological lesions were differentiated and judged according to guidelines on meat inspection for developing countries and classified into the following categories of judgments such as approved as fit for human consumption, conditionally approved as fit for human consumption, totally condemned as unfit for human consumption, and partially condemned as fit for human consumption [25].

2.6. Direct Economic Loss Assessment

Each organ's average local market price was obtained from the butcheries through a questionnaire in Nekemte, town. The analysis was based on the annual cattle capacity of the abattoir considered, market demand, the average market price of each organ in Nekemte town, and the rejection rate of commonly condemned organs developed the following formula [43] was used to determine the total direct financial loss.

$$EL = Srx\ X\ Coy\ X\ Roz$$

Where: EL = Annual economic loss estimated due to organ

condemnation

Srx = Annual number of cattle slaughtered at the abattoir.

Coy = Average cost of each liver/lung/heart/kidney

Roz = Condemnation rate of each liver/ lung/ heart/ kidney.

2.7. Statistical Analysis

The data collected from the abattoir was recorded in the format developed for this purpose and later on, entered into the Microsoft Excel 2003 program and analyzed using STATA 11.0 software. A statistically significant association between Variables is considered to exist if the computed p-valve is less than 0.05.

3. Result

3.1. Ante Mortem Inspections

Out of 384 cattle examined upon ante-mortem examination, various types of abnormalities were detected on 71 (18.5%) of cattle. The abnormalities detected include Abrasion, localized swelling/lesion, brand, lameness, lacrimation, nasal discharge, and blindness (Table 1).

In the Nekemte municipal abattoir, 384 cattle were examined during the study period. Out of the inspected organs, 199 (51.8%) were positive for various lesions detected on various organs. Adult cattle 145 (59.4%) were more likely to be condemned than young cattle 51 (26%), and male cattle 171 (53.8%) were more likely to be condemned than female cattle 28 (42.4%). Medium body condition cattle had the highest condemnation rates, followed by Poor and Good cattle with scores of 157 (75.12%), 10 (29.4%), and 32 (22.7%), respectively. Cattle from midland share the largest percentage, 129 (64.5%), of the 199 (51.8) condemned rates, followed by highland 59 (45.4%), and lowland 11 (20.4%) respectively. Age, bodily condition, and origin all varied statistically significantly ($P < 0.05$) (Table 2).

Table 1. *Rate of abnormalities encountered during ante mortem inspection in cattle slaughtered at Nekemte municipal abattoir.*

Condition or Abnormalities	Number of Animals affected	Percentage (%)
Abrasion	30	7.8
Brand	8	2.1
Lameness	5	1.3
Localized swelling/lesion	13	3.4
Lacrimation	4	1.04
Nasal discharge	6	1.6
Blindness	5	1.30
Total	71	18.5

Table 2. *Prevalence of affected organ concerning sex, age, body condition score, and origin of animals.*

Variables	Categories	No. examined Cattle	Positive	Prevalence (%)	X ²(Chi-square)	p-value
Sex	Male	318	171	53.8	2.8	1.01
	Female	66	28	42.4		
Age	Young	51	26	51	8.4	0.03
	Adult	244	145	59.4		
	Old	89	28	31.5		
Body conditions	Good	141	32	22.7	9.8	0.01
	Medium	209	157	75.12		
	Poor	34	10	29.4		
Origin of animal	Highland	130	59	45.4	12.3	0.002
	Midland	200	129	64.5		
	Lowland	54	11	20.4		
Total		384	199	51.8	-	-

3.2. Post Mortem Inspection/Examination

In the current investigation, 199 (51.8%) of the total inspected organs were rejected for a variety of reasons. The liver was the organ that was condemned the most (29.9%), followed by the lung (9.4%), kidney (1.82%), spleen (1.3%), and heart (0.52%), and the most frequent lesions on the liver were fasciolosis (18.2%), hydatid cyst (4.9%), cirrhosis (3.9%), and calcification (2.9%), with rates of 60.9%, 16.5%, 13.04%, and 09.6%, respectively. Other lesions of the lungs include hydatid cysts (9.4%), pneumonia (5.2%), abscess (0.26%) and emphysema (3.9%) all contributing to the rejection of the lung (Table 3).

Table 3. *Distribution of condemned organ concerning lesion found.*

Organ Condemned	No. of an infected organ	Lesion found	Condemnation Rate (%)	Proportion (%)
Liver	115	Fasciolosis	70 (18.2)	60.9
		Hydatid cyst	19 (4.9)	16.5
		Calcification	11 (2.9)	9.6
		Cirrhosis	15 (3.9)	13.04
Lung	70	Hydatid cyst	36 (9.4)	51.4
		Pneumonia	20 (5.2)	28.6
		Abscess	1 (0.26)	1.4
		Emphysema	13 (3.9)	18.6
		Pericarditis	1 (0.26)	20
Spleen	5	Cysticercus bovis	2 (0.52)	40
		Hydatid cyst	2 (0.52)	40
Heart	2	Cysticercus bovis	0 (0)	0 (0)
		Pericarditis	2 (0.52)	100
Kidney	7	Hydronephrosis	5 (1.3)	71.4
		Hydatid cyst	2 (0.52)	28.6
Total	199		199 (51.8)	100

Liver condemnation was more common in cattle with medium body condition (15.63%), good body condition (11.72%), and poor body condition (2.60%). Similarly, medium-conditioned cattle (22.14%) had greater liver, lung, spleen, kidney, and heart rejection rates than good and poor-conditioned animals. Adult cattle have greater liver, lung, spleen, kidney, and heart rejection rates than young cattle. Male cattle show greater rejection rates than female cattle for all examined organs (Table 4).

Table 4. *Distribution of condemned organs concerning age, sex, and body condition score.*

Variables	Categories	No. examined Cattle	Liver	lung	Spleen	kidney	Heart	Total (%)
Sex	Male	318	91	47	5	3	1	147(46.2)
	Female	66	24	23	2	2	1	52(78.8)
Age	Young	51	10	15	1	1	0	27(52.9)
	Adult	244	85	34	4	2	1	126(51.6)
	Old	89	20	21	2	2	1	46(51.7)

Variables	Categories	No. examined Cattle	Liver	lung	Spleen	kidney	Heart	Total (%)
BCD	Good	141	45	16	2	1	0	64(45.4)
	Medium	209	60	43	3	3	1	110(52.6)
	Poor	34	10	11	2	1	1	25(73.5)
Total		384	115	70	7	5	2	199 (100)

3.3. Economic Loss Assessment

The annual slaughter rate of the abattoir was 2500 cattle and the average cattle slaughtered in the abattoir were 12 per day. The average price of lung, liver, spleen, kidney, and heart is 7.5, 65.5, 2.5, 5.5, and 10 ETB (Ethiopian Birr) respectively. The direct annual economic loss due to the rejection of organs calculated based on the average price per organ in Nekemte town was estimated using the formula set by Ogunrinade, [43]. The annual estimated economic loss was 117845.00 ETB (6105.96 US Dollar) per annum. Liver condemnation accounts for the highest percentage of economic losses 29.9% (48961.25 Ethiopian Birr) of the overall losses, followed by the lungs 3412.50 ETB (Table 5).

Table 5. *The rejection rate and average price of organs condemned in the study area.*

Organ	No. of organs condemned	Rate of condemned Organ (%)	Average unit price in ETB (Ethiopian Birr)	Average annual slaughter capacity of the Abattoir	Total loss in ETB (Ethiopian Birr)
Liver	115	29.9	65.5	2500	48961.25
Lung	70	18.2	7.5	2500	3412.50
Spleen	5	1.3	2.5	2500	8125
Kidney	7	1.8	5.5	2500	24750
Heart	2	0.52	10	2500	13000
Total	199 (51.8)	51.72	91	2500	117845.00

Hint: ETB= Ethiopian Birr and USD=United States Dollar.
1 USD =19.3 Ethiopian Birr (ETB) on average during the study period (Feb 2014).

4. Discussion

The present study examined the organ condemnation and the financial harm they generated in 384 cattle assessed at the Nekemte municipal abattoir. The most common reasons for organ condemnation were fascioliasis, hydatid cysts, pneumonia, cysticercus bovis, cirrhosis, hydronephrosis, calcification, emphysema, pericarditis, and abscess. These conditions were known to be major causes for the condemnation of carcasses in many parts of [34, 38]. This finding is similar to reports from different abattoirs in Ethiopia [42, 39].

Out of 199 tested organs, the liver, the lung, the kidney, the spleen, and the heart, were all found to be defective in 27.3%, 14.3%, 4.68%, and 1.8% of cases, respectively. This result is higher than the research from cattle slaughtered at Adigrat Municipal abattoir [46] reported (8.19%) of the liver was defective, but it was lower than the reports of [52] from Gondar, [39] from Kombolcha and [46] from Jimma Municipal abattoirs who reported 31.1, 66.55 and 64.4%, respectively. Livers were the most rejected organ at post-mortem meat inspection as has also been reported in other studies in some African countries [46, 45].

The rejection rate of the liver due to hydatidosis in the present study was 19 (4.9%), which is close to studies done by Bzuayehu *et al*, [14] reported from Harar 3. 62%. However, much lower than the reports of [36] 31.7% from Addis Ababa, and [18] 33.33% from Dire Dawa. Results of 3.9% liver condemnation owing to cirrhosis were higher than the 1.1% reported by Sirak [48], in Gondar, while the present study was by far lower than the 16.5% reported by Nurit, [42] in Kombolcha, compared to the report of 1.9% in Tanzania by Nongaond, [41]. The lung condemnation rate (9.4%) in the current research is lower than the 19.37% reported by Hagos,

[26] from Mekelle. However, this rate is better than the 1.42% reported by Amene, [8] from Jimma. This variance in hydatidosis prevalence may result from various animal husbandry practices, backyard killing of animals, improper disposal of diseased carcasses, the existence of stray dogs and their interactions with animals, and other factors [6].

Pneumonia affected lungs in this study 5.2% was higher than (0.14%) reported by Assefa, [19] in cattle slain at the Zango slaughterhouse. Many factors, such as stress factors like exposure to environmental dust or exhaustion from long journeys made by pastoral livestock in search of pasture and water or when animals are taken to livestock markets or abattoirs, as well as parasitism, may explain the different prevalence of pneumonic lungs and the present study 5.2% of Emphysema and (0.26) of abscess affected lung were identified.

In this study, the rejection rate of the lung due to emphysema was 5.2%, which was in agreement with the reported rate of [13] 6.77% from Jimma.

The rejection rates of kidneys and hearts (1.82%, 0.52%) in this study are lower than the rejection rate (18 and 11%) reported by Bassona Worana Woreda Agricultural and Rural Development Offices [13] from Jimma and (5.77 and 3.71%) by 65 from Mekelle abattoirs. In the present study (1.3% and 0.52) Kidney was condemned due to hydronephrosis, and hydatid cyst respectively. This result was in agreement with the report by Sirak, [48, 13] from Gondar and Jimma abattoirs. Spleen (1.3%) in this study was higher than the rejection rate of 0.2% reported by Abele [2] in cattle slaughtered at Mekelle Municipal abattoir. Bovine fasciolosis is a widespread ruminant health problem and causes significant economic losses to the livestock industry. Its prevalence and economic impacts have been reported by different researchers in different parts of the world [10] indicated the existence of bovine fasciolosis in almost all regions of Ethiopia in their reports. However, the prevalence rate, epidemiology, and the species involvement vary with locality and this is mainly attributed to the variation in the climate and ecological conditions such as altitude, rainfall, temperature and livestock management system one of the most important factors that influence the occurrence of bovine fasciolosis in an area is the availability of suitable snail habitat [49].

The overall prevalence of bovine fasciolosis (18.2%), observed in this study was in close agreement with the report of [11] from northern Ethiopia, who reported a 24.3% prevalence and it was much lower than studies from the Amhara region, [60] reported a 90.7% prevalence of fasciolosis in cattle slaughtered at Gondar abattoir. In comparison [51] recorded a prevalence of 46.2% at Jimma abattoir, and also lower than studies from other African countries [46] from Zambia [45] from Zimbabwe reported 53.9 and 31.7% prevalence, respectively. On the other hand, the result of the present study was also slightly higher than 14.0% reported from the Wolaita Soddo abattoir [3] and fasciolosis reported in the Diredawa Municipal abattoir 14.4% [18]. The difference in prevalence among geographical locations is attributed mainly to the variation in climatic and agro ecological conditions such as altitude, rainfall, and temperature.

The prevalence of bovine fasciolosis from the present study 18.2% was slightly lower than the previous reports from Bedelle 31.5%, [57] 27.1%, and 29.8% from Wolisso (unpublished) and Nekemte (unpublished) abattoirs, respectively. However, the prevalence was much lower when compared with several reports from different abattoirs of the country like at Gondar abattoir (90.65%) [59], at Debre Brehan abattoir (88.57%) (Unpublished) study and at Ziway abattoir 56.6% [4], at Sodo abattoir 47% [24], and 46.58% at Jimma abattoir [51].

However, this result was higher than the value reported by Okoli *et al.* [44], Kithuka *et al.* [31], Swai and Ulicky [50], and Abunna *et al*, [3] with a prevalence of 8% and 8.2%, 14% and 14.04% from Nigeria, Kenya, Hai Town (Tanzania), and Wolaita Sodo, municipal abattoirs, respectively.

The result of the present study revealed that the animal's sex has no significant effect ($p > 0.05$) on the occurrence of bovine fasciolosis. This result agrees with the report of [47] who concluded that sex has no impact on the infection rate and hence both males and females are equally susceptible and exposed to fasciolosis. But this contradicts the work of [12] who reported that the effect of sex on the prevalence of bovine fasciolosis (male animals were more affected) than female animals might be attributed to the management system, with longer exposure of males outdoors when females are kept indoors at the beginning of lactation.

The result of the present study showed that age significantly affects the prevalence of bovine fasciolosis; being higher in young animals than the adult ($p < 0.05$). There was a decrease in infection rate (prevalence) as age increased. This may be due to the result of acquired immunity with age which was manifested by humoral immune response and tissue reaction in bovine liver due to previous challenge. These agreed with an experimental study conducted by Ramajo [47] which confirmed higher infection rates in younger animals. The results of the present study indicated that the body condition of the animals has a significant association with the occurrence of fasciolosis. The prevalence was higher in poor-body-conditioned animals than in medium and good-body-conditioned animals. The prevalence of fasciolosis was higher in animals with poor body conditions because this body condition in cattle is manifested when fasciolosis reaches its chronic stage.

The overall prevalence of bovine hydatidosis (15.34%), observed in this study is in close agreement with the report from Burdur (Turkey) 13.5% [56] and from Thrace (Turkey) 11.6% [21]. The present result of the prevalence of bovine Hydatidosis (15.34%), was lower than the 48.7% reported from the Ngorongoro District of the Arusha region, [20] and the 34.15% prevalence rate from an abattoir survey from Ethiopia [1] and (29.69%) [19], from cattle slaughtered at the Ambo municipal abattoir, and (22.1%) reported from Tigray

region, [58]. This might be due to the abundance and frequent contact between the infected intermediate and final hosts. Other factors like differences in culture, social activity, and attitude to dogs in different regions might have contributed to this variation [32]. Moreover, poor public awareness about the disease and the presence of few slaughterhouses might have contributed to such a higher prevalence rate.

The Present study indicated that sex has no significant association with the occurrence of hydatidosis this study was in line with the reports from [47] and [17] concluded that sex has no impact on the infection rate, but it has a significant association with age, origin of animal and body condition scores of the cattle slaughtered at Nekemte Municipal Abattoir, this was also in line with the report from Adigrat [11] who reported, age and body condition was significant association with the occurrence of hydatidosis.

In current study, the annual direct financial loss due to the condemnation of organs at Nekemte Municipal Abattoir was estimated to be 117845.00 Ethiopian Birr, which is higher than the direct financial loss analysis estimated by Terefe [53] from the Hossana Municipal Abattoir and Terefe [53] from the Luna export abattoir, which estimated a total financial loss of about 88,806. The current finding was significantly lower than the report of [35] who estimated yearly losses of 109, 492,725.5 Ethiopian Birr as a result of organ condemnation from calves at the Dire Dawa Municipal abattoir. This loss could be much higher if the indirect loss was calculated. The difference in the financial loss estimated in various abattoirs and/or parts of Ethiopia would be due to the variations in the prevalence of disease, the mean annual number of cattle slaughtered in the different abattoirs, and also the variation in the retail market price of organs [6].

5. Conclusion and Recommendations

Out of 384 creatures examined 199 (48.2) had colorful postmortem abnormalities. The current study's findings showed that the most common reasons for organ commination in abattoirs, leading to significant fiscal losses in the cattle assiduity, were fasciolosis, hydatidcysts, pneumonia, cysticercus bovis, cirrhosis, hydronephrosis, calcification, emphysema, pericarditis, and abscesses. The total fiscal loss estimated in this study, due to organ commination was 117845 Ethiopian Birr (6105.96 US Dollar) annually.

Grounded on the above conclusion the below recommendations were encouraged;

1) Postmortem examination of organs should be conducted more seriously to help the public from acquiring zoonotic conditions like hydatidosis generally detected during posthumous examination.
2) Growers, civic community, abattoir workers, butchers, and canine owners should be trained on the proper disposal of organs.
3) To minimize the incurred profitable losses and lower the rate of organ condemnation, the area's responsible veterinary service should apply measures for livestock complaint control and forestallment.
4) The government should concentrate on erecting abattoirs with good installations, controlling neighborhoods, and forbidding the illegal vicinity bloodbath of cattle.
5) Further epidemiological studies on the complaint status, health significance, and associated trouble factors impacting the circumstance of zoonosis should be conducted in the study area.

Abbreviations

AME	Anti-Mortem Examination
PME	Post Mortem Examination
WHO	World Health Organization
FAO	Food and Agricultural Organization
ETB	Ethiopian Birr
USD	United States Dollar
GDP	Gross Domestic Product

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Author Contributions

Mohammed Mahmud Hammed is the sole author. The author read and approved the final manuscript.

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Research data are not shared with any other body.

Conflicts of Interest

The author declares no conflicts of interest.

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Biography

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Research Field

Mohammed Mahmud Hammad: Helicobacter Species Infections in Domestic Animals, *Escherichia coli* O157: H7 identification from goat milk, Bovine mastitis prevalence and risk factors, Zoonotic disease in camel milk, Trypanosomiasis in camel milk.