

## Investigations on Economic Significance of Hydatidosis on Animals Slaughtered at Hirna Municipal Abattoir

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### ABSTRACT

Hydatidosis is a serious helminthic cyclo zoonotic disease that possesses an important economic and public health concern in rural and urban area. A study was conducted from November 2016 to April 2017 to investigate the incidence of the Hydatid cysts in bovine and goats in Hirna Municipal Abattoir by examination of all visceral organ of slaughtered cattle and goats and to estimation of direct and indirect monetary losses in abattoir. Out of 252 bovine examined 47 (18.65%) was harbor one or more Hydatid cysts and out of 132 goats examined 14 (10.6%) were harbored one or more Hydatid cysts. From the examined bovine 20(7.94%), 17(6.75%), 7(2.76%), 3 (1.19%), 4(1.59%) and 5(1.98%) contained Hydatid cyst in their only on lungs, only on livers, only on Heart, only on kidney, both on lung and heart and both on liver and kidney of cattle respectively. From examined goats hydatid cyst organ distribution were found 7(5.3%) merely on lung, 3(2.27%) merely on liver, 3(2.27%) merely on heart, 1(0.76%) merely on kidney, 3(2.27%) on both lung and heart and 2(1.51%) on both liver and kidney. Out of 75 hydatid cysts collected from different organ of 61 heads positive animal and examined for status of fertility, sterility and calcification 15(20%) were fertile, 33(44%) sterile and 27(36%) calcified. A significant association was observed ( $P < 0.05$ ) between the disease positivity and age groups, body condition of both animal it's more prevalent on adult age of both goats and cattle and high prevalence of Hydatidosis was observed on medium body condition of both animal. The annual financial losses from organ condemnation and carcass weight loss due to Hydatidosis at Hirna Municipal Abattoir were estimated to be 32,810.92 and 319,900.73 Ethiopian Birr (ETB) for goats and cattle respectively. Therefore, initiation and implementation of control measures is necessary in order to alleviate its economic impact as well as zoonotic risks to the human. Control measure like educate communities to avoid backyard slaughter practice, regular deworming of dog and proper disposal of condemned organ were important to reduce Hydatidosis in communities.

**Keywords:** Abattoir, Bovine, Carcass, Dog, Goat, Hirna, Hydatidosis, Prevalence

**DOI:** 10.7176/JHMN/109-02

**Publication date:** June 30<sup>th</sup> 2023

### INTRODUCTION

Echinococcosis, also called hydatid disease or Hydatidosis is one of the major parasitic problems of domestic animals and is a cyclozoonotic disease that possesses important economic losses and public health problems both in rural (Elisondo *et al.*, 2002) and urban areas (Chrieki, 2002) worldwide (Eckert and Deplazes, 2004). Hydatidosis in human occurs and is characterized by long-term growth of meta-cestode (larval) stages (hydatid cysts) in internal organs (mainly liver and lungs) and on intermediate host animals, cattle, sheep and goats (Jones *et al.*, 2012). Infection of human occurs accidentally by ingestion of *E. granulosus* egg by humans but does not play a role in the natural cycle. Six species of Echinococcus have been recognized; four are of public health concern, which are *E. granulosus* causing cystic echinococcosis, (CE), *E. multilocularis* causing alveolar echinococcosis, and *E. vogeli* and *E. oligarthrus* causing polycystic echinococcosis (Huttner *et al.*, 2009).

Cystic echinococcosis, (CE), caused by *E. granulosus* as a cestode inhabiting small intestine of the dog which acts as a definitive host (Eckert and Deplazes, 2004). Definitive hosts are canids, mostly dogs, where the worm grows to adulthood in several months. The eggs are passed out along the fecal material and scattered in the pasture by wind and water which are ingested by various hosts. The eggs may survive several months outside the body, depending on the ambient temperature. When these eggs are ingested by the intermediate hosts like cattle, sheep, goat, buffalo and human, the larva migrates through the intestinal wall and penetrates the organs, mostly liver and lungs (Shalaby *et al.*, 1999; Francias, 2004; Huttner *et al.*, 2009).

Human cystic echinococcosis is the most common presentation and has a cosmopolitan distribution probably accounts for > 95% of the estimated 2-3 million cases in the globe (Craig *et al.*, 2007). Despite some progress in the control of echinococcosis, this zoonosis continues to be a major public health and economic burden to a number of societies where *E. granulosus* is endemic, while in many other countries the disease constitutes an emerging and re-emerging (Moro and Schantz, 2009). Its distribution is usually more prevalent in developing countries, especially in the rural communities where the dog lives in close quarters with man and domestic herbivores (Eckert and Deplazes, 2004; Cringoli *et al.*, 2007). Moreover, the reason of widespread is mainly due to the ability of this tape worm to adapt to a wide variety of domestic and wild intermediate hosts (Torgerson and Budke, 2003).

Hydatidosis, in terms of animal health the disease can lead to significant losses of production due to organ

condemnations, lowered production. This particularly impacts on societies with low socio economic development (Torgerson, 2014). The pathogenesis of Hydatidosis in livestock heavily depends on the extent and severity of cyst development in the organs that most often develop in the liver and lungs and also develop in the kidneys, spleen, nervous tissue, bone and other organs (Jenkins *et al.*, 2005). The major sources of morbidity in humans are pressure effects from cyst size, location in a sensitive organ (brain, reproductive tract, bone), or cyst rupture with subsequent anaphylaxis or dissemination of the infection. The most common affected organs, however, are the liver and the lungs where 90% of the echinococcal cysts develop; excluding liver and lungs, all the other organs of the human body are considered as uncommon sites of localization (Moro and Schantz, 2009).

Cystic echinococcosis occurs throughout the world and causes considerable economic losses and public health problems in many countries including Ethiopia (Helina *et al.*, 2012). Factors governing the prevalence of Hydatidosis are given locally being associated with prevailing specific social, cultural, environmental and epidemiological situations. Human behavior plays a significant role in the epidemiology and the dynamic of transmission differ between the dog and its normal intermediate and human aberrant hosts (Radfar and Iranyan, 2004).

Hydatidosis has been known and documented in Ethiopia as early as 1970, it is still the major cause of organ condemnation in most Ethiopian abattoirs and lead to huge economic losses to the livestock industry (Yihdego, 1997). Several reports had indicated that Hydatidosis is widely prevalent in livestock population of various regions of Ethiopia (Kebede *et al.*, 2006). The absence of proper meat inspection procedures and the presence of large stray dog population are thought to contribute significantly to the prevalence of the disease in Ethiopia (Kebede *et al.*, 2009a). Currently there are no recent data about the status of ruminant Hydatidosis in Hirna (West Harerge, Ethiopia). Therefore the objectives of this study were:

- To determine the prevalence of Hydatidosis in cattle and Goat slaughtered in Hirna municipal abattoir.
- To assess cyst distribution on the organ.
- To assess the direct and indirect economic losses due to Hydatidosis.

## MATERIALS AND METHODS

### Study Area Description

This study was conducted in Hirna Municipal Abattoir. Hirna is located in Tullo district, West Hararghe zone of Oromia regional state. The district is located 371km east of the capital city, Addis Ababa and 45km from Chiro, zonal town. The rainfall is bimodal with short rainy season from March to May and long rainy season from June to September, followed by dry season from October to February. The district has daily mean temperature ranging from 18°C-26°C and mean annual rain fall ranging from 550mm-800mm. The agro ecological zones of the district are highland (*Dega*) 40%, medium high land (*Weynadega*) 57% and Kola 3%. The woreda has an altitude ranging from 1500m-2500m above sea level and the relative humidity ranges between 21.9% - 65% (ARDO, 2012).

### Study Population

The study animals were both local or cross breed of cattle and local breed of goat brought from various localities to Hirna municipal abattoir for slaughtering purposes. All animals brought to this slaughter house for slaughter purpose were male. The majority of animal were brought from nearby livestock markets, namely Caffebante, Debeso, Messela, Ciro, Doba, Boroda and Hirna. These animal were forced to walk more than 20 Km to reach abattoir and Hirna town.

### Study Design

A cross-sectional study was conducted from November 2016 to April 2017 to determine the prevalence of Hydatid cyst, its distribution on different organs of the animals and to assess economic losses.

### Sample Size Determination and Sampling

The sample size determined by the formula of Thrusfield (2005). Therefore, by using estimated 50 % prevalence of Hydatidosis on animal and taking a confidence interval of 95% and 5% absolute precision, the minimum sample size required for this study was 384 slaughter animal.

$$n = \frac{1.96^2 P_{exp} (1 - P_{exp})}{d^2}$$

Where n= required sample size  
P<sub>exp</sub>=expected prevalence  
d= required precision

Abattoir survey was conducted three times a week out of the five slaughter days. On each sampling day, cattle and goats brought for slaughter purpose were selected by randomized systemic sampling method.

## Study Methodology

### *Ante-mortem inspection*

Ante mortem inspection was carried out using visual examination on each of the study animals. Age, body condition scoring and breed of the study animals were recorded. Estimation of age carried out by examination of the teeth eruption using the De Lahunta and Habei approach (1986). Two age groups were considered; age less than or equal to 5 years assigned as young and above 5 years old assigned as adult. The age of goat was determined by dentition formula according to the method described by Sanchez-Andrade *et al.* (2002) and animals categorized into two age groups (<1years =young and >1years=adult). All animal presented in slaughter house for slaughter purpose was male animal. Body condition (nutritional status) of livestock was subjectively classified as medium body condition (ribs and other bony prominences noticeable on visual inspection but have fair fleshy background on palpation) and good body condition (bony structures notable only on palpation). Throughout the study period animals that had poor body condition have not slaughtered because they does not pass ante mortem judgment. The breed type (Local breed and Holstein Friesian cross breed) was classified on the external traits that clearly separate local from European type. Local breed cattle have hump, narrow body, sloping rump and long legs, whereas Holstein Friesian cross breeds are hump less breeds with large body size and black-and-white color (hence, sometimes called black-and-white breed)(FAO, 2013).

### *Postmortem examination*

Organs of the abdominal and thoracic cavities namely; liver, lungs, heart and kidney were systematically inspected for the presence of Hydatid cyst by applying the routine meat inspection procedures outlined by Alula (2010). The primary examination involved visualization and palpation of organs. Secondary examination involved further incision of each organ; in the case, when and where a single or more Hydatid cysts was found.

### *Examination of cyst fertility*

Hydatid cyst were carefully removed and separately collected (in organ basis) in clean containers for further cyst characterization. Hydatid cyst characterization was made to assess the status of the cysts. Cyst fertility was examined according to salem *et al.* (2011). All 75 hydatid cysts found on cattle and goat were transported to Hirna regional veterinary laboratory by ice box for fertility study. Then intra cystic pressure was reduced by the cyst wall was penetrated by using needle then the cyst fluid was transferred into sterile Petri dish by incision of cyst wall by scalpel blade it was puncturing cysts scalpel blade and examined under a microscope (40x). Ascertain the fertile or sterile nature of the hydatid cysts based on the presence or absence of protoscolices in the hydatid cysts.

### *Estimation of Financial Losses Due to Hydatidosis*

There are direct and indirect financial losses associated to Hydatidosis, direct economic losses associated with condemnation of usable visceral organs (liver, lung, kidney and heart) whereas cost due to carcass weight reduction was considered as indirect loss. Annual economic loss due to organ condemnation was determined by considering annual slaughter rate of cattle and goat and the prevalence of Hydatidosis per organ and an estimated 5 % carcass weight loss (Denbarga, 2011) and by taking 126kg and 15 kg as average dressing percentage of cattle and goats respectively. Six different meat vendors were interviewed randomly to establish the average price per unit of organs, and the average annual slaughter rate of livestock in Hirna municipality abattoir was estimated from secondary data for the past two years. Using current organ condemnation rates and price indices combined with annual cattle slaughter rate at the abattoir (secondary data), annual economic losses associated to Hydatidosis was calculated by using the formula described by Regassa *et al.* (2010) as follows.

$$LOC = (NAS * ph * plu * Cplu) + (NAS * Ph * Phr * Cphr) + (NAS * Ph * pli * Cpli) + ((NAS * Ph * Pkid * Cpkid)$$

LOC = Loss due to organ condemnation: NAS = Mean number of animal slaughter annually: Ph = Prevalence of Hydatidosis: Plu = Present involvement of lung cases: Cplu = Current mean retail price of lung: Phr = Present involvement of heart: Cphr = Current mean retail price of heart: Pli = Present involvement of liver: Cpli = Current mean retail price of liver: Pkid = Present involvement of kidney: Cpkid = Current mean retail price of kidney.

The indirect economic losses were considered to estimate the economic loss due to carcass weight loss. Information on the mean retail market cost of 1kg beef and market cost of 1kg of goat meat at Hirna town were obtained from butchers during the study period; the average annual slaughtered animal at Hirna municipal abattoir were obtained from secondary data of the last two years; and the average carcass weight loss of 5% due to Hydatidosis was describe by Torgerson *et at.* (2001). Thus, the economic loss due to denied carcass weight gain was determined as described by Regassa *et al.* (2010) using the following formula

$$\text{For cattle } LCWL = NAS * Ph * Cpb * 5\% * 126kg$$

$$\text{For goats } LCWLg = NAS * ph * Cpb * 5\% * 15Kg \text{ Fato (2017)}$$

LCWL = Loss from carcass weight loss; 5% = Estimated carcass weight loss due to hydatosis; NAS = Mean number of cattle slaughter annually: Ph = Prevalence of Hydatidosis: Cpb = Current average price of 1kg beef at Hirna town: 126kg = Average carcass weight (Dressing percentage) adult local breed: 15kg =Average carcass weights of goat: Total economic loss= LOC + LCWL

## Data Analysis

Data collected from abattoir survey was entered into MS Excel 2013 spread sheets and analyzed using SPSS version 20 statistical soft ware. Associations between explanatory variables (age, Breed and body condition score) and prevalence was done by chi-square ( $\chi^2$ ) test. In all analyses confidence level was at 95% and  $p < 0.05$  was taken as significance.

## RESULTS

### The over All Prevalence of Hydatidosis

Out of 384 heads of animals (252 cattle and 132 goats) slaughtered and examined, 47(18.65%) cattle and 14(10.6%) of goats were infected with hydatid cyst, harboring one or more cysts involving different visceral organs (lung, liver, heart, and kidney). Statistical analysis showed that the prevalence of Hydatidosis was significant with the species of the study animal  $p < 0.05$  was .041.

Table 1: Prevalence of Hydatidosis on species

Species	Total no of examined	Total no of positive	Prevalence
Bovine	252	47	18.65%
Caprine	132	14	10.6%
<b>Total</b>	<b>384</b>	<b>61</b>	<b>15.9%</b>

### Prevalence of Hydatidosis with risk factor

Rate of infection in different age groups (young and adult) categories were assessed and described (Table 2). Out of 252 cattle examined and prevalence of Hydatidosis were statistically significant with the age cattle ( $P < 0.05$ ,  $P = 0.042$ ) with adult group having higher infections rate. In goat higher prevalence of the infection on adult having age greater than 1 the p- value age of goats was 0.03 analyses show that statically significant.

Prevalence of Hydatidosis and body condition of the animals: All of animals presented to the Hirna municipal abattoir were good and medium body condition poor body condition animal not slaughter because did not pass antemortum inspection statically analysis show that prevalence of Hydatidosis and body condition statically significant p value was 0.00 and .021 for cattle and goats respectively higher rate of infection recorded on medium body condition animal described by (Table 2).

Table 2: Prevalence of Hydatidosis with risk factors

Risk factors	Cattle examined			Goat examined		
	No. examined	No. of cases	%	No. examined	No. of cases	%
Age						
Young	109	13	11.93	120	12	10
Adult	143	34	23.78	12	2	16.67
Body condition						
Medium	105	31	29.52	77	11	14.28
Good	147	16	10.88	55	3	5.45
Breed						
Local	217	44	20.28	132	14	10.6
Cross	35	3	8.57	-	-	-
<b>Total</b>	<b>252</b>	<b>47</b>	<b>18.65</b>	<b>132</b>	<b>14</b>	<b>10.6</b>

Breed: majority of animal presented at Hirna municipal abattoir were local breed of animal among 252 cattle present for slaughter purpose 217 was local breed and 35 was cross breed cattle. The statistical analysis showed that there was no significant associations between the prevalence of Hydatidosis and breed of cattle presented to the Hirna municipal abattoir for slaughter purpose during the study period p value was .214 high rate of infection on local breed of cattle. There was no cross breed for goat present for slaughter purpose to Hirna municipal abattoir.

### Hydatid Cysts Organ Distribution

Overall distribution of cysts in different organs of cattle and goat slaughtered at Hirna municipal abattoir was described (Table 3). From the examined bovine 20(7.94%), 17(6.75%), 7(2.76%), 3 (1.19%), 4(1.59%) and 5(1.98%) contained Hydatid cyst in their only lungs, only on livers, only on Heart, only on kidney, both on lung and heart and both on liver and kidney of cattle respectively, whereas From examined 132 goats hydatid cyst organ distribution were found 7(5.3%) merely on lung, 3(2.27%) merely on liver, 3(2.27%) merely on heart, 1(.76%) merely on kidney, 3(2.27%) on both lung and heart and 2(1.51%) on both liver and kidney. Generally the lung was the most frequently affected body organ followed by liver, heart and kidney. Meanwhile, no Hydatid cysts were investigated on the spleen and muscle examined during study period.

Table 3: Hydatid Cysts Organ Distribution

Organ	Number of Cattle examined			Goats		
	Examined	No. case	%	Examined	No. case	%
Lung	252	20	7.94	132	7	5.3
Liver	252	17	6.75	132	3	2.27
Heart	252	7	2.78	132	3	2.27
Kidney	252	3	1.19	132	1	.76
Lung and heart	252	4	1.59	132	3	2.27
Liver and kidney	252	5	1.98	132	2	1.51

#### Cyst Status Characterization:

Out of 75 hydatid cysts collected from different organ of 61 heads positive animal and examined for status of fertility, sterility and calcification 15(20%) were fertile, 33(44%) sterile and 27(36%) calcified describe by (Table 3).

Table 4: Hydatid Cyst Status Characterization

Spp	No. examined	Fertile	Sterile	Calcified
Bovine	56	11	24	21
Goats	19	4	9	6
<b>Total</b>	<b>75</b>	<b>15</b>	<b>33</b>	<b>27</b>

Table 5: Price of Organs during Study Period in Hirna Town

Organ	Bovine	Caprine	Prices organ in Ethiopian birr	
			Range	Mean
Lung	25	10	20-40	30
Liver	20	3	50-100	75
Heart	7	3	10-20	15
Kidney	3	3	10-20	15

#### Estimation of economic loss

In the present study, total of 25 lungs, 20 livers, 3 kidneys and 7 hearts of bovine were condemned due to detection of Hydatid cysts and of 10 lungs, 3 livers, 3 kidneys and 3 hearts of goat were totally condemned due to hydatid cyst detection. There were 1500 bovine and 2000 caprine totally 3500 animal was slaughtered annually in Hirna municipal abattoir. The overall monetary loss associated to organ condemnation due to Hydatid cysts in the present study was around 2,664.23 birr and 1010.92 birr annually for bovine and goat respectively based on price organ described by (Table 5). Economic loss due to denied carcass weight gain was calculated based on the above formula the average price of 1kg of beef was 180 birr for caprine meat price was 200 birr the average dressing percentage of cattle was 126kg for caprine 15kg. Then the indirect economic loss of Hydatidosis was 317,236.5 birr and 31,800 birr annually for cattle and goats respectively. Total economic loss due to Hydatidosis calculated by this formula Total loss= LOC + LCWL. The total economic loss was found 32,810.5 birr and 319,900.73 birr annually by goat and bovine Hydatidosis respectively.

#### DISCUSSION

The occurrence of Hydatidosis in cattle was found to be 18.65% during the study period in Hirna municipal Abattoir. The current finding is almost similar to that reported as 16.85% by Jemere and Butako (2011) in Wolaita Sodo, 15.4% by Regassa *et al.* (2009) in Hawassa, 16% by Kebede *et al.* (2009b) in Wolaita Sodo and 9.4% in Harar by Belina *et al.* (2015). In general terms, throughout the world, there had been different magnitude records of Hydatidosis in cattle with low, medium and high rates of occurrences. High prevalence rates were registered in other areas of the country such as 61% in Assela by Koskei (1998), 52.69% in Hawassa by Regassa *et al.* (2010), 36.3% in Jima by Mesele *et al.* (2013), 20.5% in Arbaminch by Tilahun and Terefe (2013), 48.9% in Debre Markos by Kebede *et al.* (2009) and 32.1% in Mekelle by Berhe (2009). A possible reason for the difference in the prevalence of bovine Hydatidosis in different areas including this study area could be related to the source of cattle, number of dog population, dog management, deforming practices of dog, offal disposal habits, backyard slaughtering animal, cultural and religious view of community and the strain difference of *E. granulosus* that exists in different geographical situations (Arene, 2013).

The prevalence of Hydatid cysts in goats have been found to be ranging from 6.7% to 24.8% by Sangaran and John (2009); Kebebe *et al.* (2010); Kumsa and Mohammedzin (2012). The current study was agree with previous report (10.6%). The available literature mentioned in this manuscript or elsewhere showed that the prevalence of Hydatidosis is high in cattle compared to goats. This may be due to the difference in feeding habits

that goats are browsers.

In this study the rate of infection of Hydatidosis in different age groups of cattle, statically significant ( $P < 0.005$ ) was observed. Adult Cattle were highly affected than young. The difference in infection rate could be mainly due to longer exposure time to *E. granulosus*. This finding is similar to the finding of by Yihdego (1997), Umur (2003), Azlaf and Dakkak (2006) and Esatgil and Tuzer (2007). Adult goat higher infection rate Hydatidosis than young goat statically significant this report was agreed with finding of Fato (2017). Bovine and caprine having medium body condition score were found higher rate of infection than that of having good body condition to have statistically significant ( $P < 0.05$ ). This finding is an agreement with the finding of Melaku *et al.* (2012). The reason for this is possibly that in moderate to severe infection, the parasite may cause retarded growth, reduced quality and yield of meat and milk as well as live weight loss Eckert and Thompson (2011). The infection rate Hydatidosis of the cattle was also statistically not significant p value was 214. With higher prevalence (20.28%) in local breeds than in cross breeds (8.57%). This finding was agreed with the finding of Lemma *et al.* (2014). The incidence of bovine Hydatidosis higher on local breed of cattle this is because local breeds usually kept in pasture and have high chance to form contact with contaminated pasture.

In the current study, Hydatid cysts were found predominantly in lung and liver representing 8% and 7.3 %, respectively. Literature reveals that Hydatid cysts are most commonly found in lungs and liver of ungulates Alemu *et al.* (2013) and it is in agreement with the findings of Bekele and Butako (2011), Njoroge *et al.* (2002) and Eckert and Deplazes (2004), which show that the lung and liver are the most common sites of Hydatid cyst in domestic animals. This could be due to the fact that lungs and liver possesses the first great capillaries sites encountered by the migrating Echinococcus oncosphere (hexacanth embryo) which adopt the portal vein route and primarily negotiate hepatic and pulmonary filtering system sequentially before any other peripheral organ is involved. Then those oncospheres which transfer to the blood will reach the systemic circulation and other tissues Eckert and Deplazes (2004); Bizuwork *et al.* (2013). The lung was having greater capillaries bed and softer consistency than liver these were the reasons lung was more frequently affected than liver.

The laboratory findings of the hydatid cysts recorded during the study period indicated that a lower percentage of fertility (20% n=15) was identified out of the total cysts examined (75 cysts) and relatively higher percentage was found to be sterile (44% n=33) and calcified (36% n=27). This report were agree with that of Melaku *et al.* (2012) who reported a lower fertility (13.8%) and higher sterility (63.5%) and calcification (22.5%) percentages of bovine hydatid cysts in Dessie municipal abattoir and finding of Mohamed *et al.* (2017) reported 14%, 64.3% and 21.7% of fertile, sterile and calcified Hydatid cysts respectively in Jigjiga Municipal Abattoir. The variation in fertility, sterility and calcification among the hydatid cysts may be related with the *E. granulosus* strain difference in different geographical locations, the immune system of the host and other factors like deworming practices (McManus and Thompson, 2003)

This study found the total economic losses of Hydatidosis was 32,810.92 birr and 319,900.73 birr annually for goat and bovine respectively at Hirna town. Based on local market prices in the study period. The current report was comparable to Different annual economic losses due to Hydatidosis were also reported from different parts of the country. For example economic losses of 129,135.6 ETB and 70,422 ETB were reported in Adama and Mekele municipal abattoirs respectively by Getawet *et al.* (2010) and 841,419.3 ETB was reported in Harar by Belina *et al.* (2015). The difference in economic loss in various regions is possible because of the variation in the prevalence of the disease, mean annual slaughtered cattle in different abattoirs and variation in the retail market price of organs.

## CONCLUSION AND RECOMMENDATIONS

Hydatidosis causes considerable economic loss in livestock due to the condemnation of organs and decrease weight gain. Therefore, for establishment of a control strategy, detailed information on local epidemiology and significance of the disease must be known. The findings of the present study reflected Hydatidosis more prevalent in cattle than goat and causes considerable economic and zoonotic impact in Hirna town, which deserves serious attention by the various stakeholders in order to reduce losses and safe guard the public health.

Therefore, based on the above conclusions the following recommendations are forwarded

- Proper disposal of condemned organ should be performed in abattoir.
- Awareness should be created in all community to avoid backyard slaughtering.
- The slaughter house fence should be fenced properly to avoid entrance of stray dog into slaughter compound.
- The number of stray dog should be reduced in community by responsible body.
- Regular deworming of dog should be preformed.
- Awareness should be created in all stake holder about the life cycle and transmission of Hydatidosis.

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