

## Major Causes of Chicken Mortality and Gross Pathological Study on Commercial Poultry Farms in Wolaita Sodo Town, Southern Ethiopia

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**Abstract:** A longitudinal study was conducted from November 2016 to April 2017 in Wolaita Sodo town with the aim of investigating major causes of chicken mortality and assessing clinical and gross pathological appearance of chicken disease in commercial poultry farms. Three poultry farms were selected purposively based on their willingness and accessibility. From a total of 5800 chicken followed for six months. 403 deaths were recorded, of which death due to disease ranks first by 66% and followed by mismanagement (11.2%), accident (6.9%), cannibalism (6.5%) and other miscellaneous causes (9.4%). Detail Clinical study, parasitological investigation and necropsy examination were conducted on 50 diseased chickens and those chickens revealed depression, diarrhea, ruffled feather, poor body condition and paralysis as major clinical signs. Necropsy examination also showed various gross pathological lesions on different systems with hemorrhage and focal necrosis as leading lesions in organs like; liver, small intestine, trachea, lung, spleen, skeletal muscle and bursa of fabricius. The parasitological investigation of fecal samples from those diseased chickens resulted 18 positive samples, of which 9 (18%) were *Coccidia* species, 5 (10%) were *Ascarida galli* and 4 (8%) were *Hetrakis gallinarium*. The findings indicate that chickens in the study area had facing various health problems which are hampering their productivity and causing mortality. Therefore, improve management aspect of the farms and further specific study on identification of etiologic agents and their management should be done.

**Key words:** Chickens • Disease • Gross Pathology • Mortality • Wolaita Sodo

### INTRODUCTION

Poultry in many parts of the modern world is considered as the chief source of not only cheaper protein of animal origin but also as high quality human food [1]. As a result the sector continues to grow and industrialize in many parts of the world. An increasing population, greater purchasing power and urbanization have been strong drivers of the growth. Advances in breeding and health care have given rise to chickens that meet specialized purposes and are increasingly productive. These developments have led the poultry industry to scale up rapidly [2].

The poultry population of Ethiopia was estimated 56, 866, 719 were 54, 510, 523 (95.86%) are indigenous; 770, 052 (1.35%) are exotic and 1, 586, 144 (2.79) are hybrid [3]. Although rural poultry is the dominant form of poultry production in the developing world including Ethiopia [4], with the aim of improving poultry productivity, different breeds of exotic chickens were imported to Ethiopia since

the 1950's. Several organizations have disseminated many exotic breeds of chicken to rural farmers and urban based small-scale poultry producers [5]. Concurrently, there is also establishment of intensive poultry farming in and around cities of Ethiopia [6].

The poultry sector of Ethiopia is characterized by low input, low output, inadequate veterinary services, poor housing, poor biosecurity and periodic destruction of large proportion of the flock due to disease outbreaks [7]. The sector has been adversely affected by variety of constraints. Besides poor feeding, housing and management, disease is one of the most important constraints to poultry industry. Poultry mortalities due to disease range from 20% to 50% but it can rise as high 80% during epidemics [8]. Infectious diseases are the predominant once with a significant impact on the poultry sector development. Most of the infectious diseases are endemic in the country and some of them are emerging and re-emerging diseases. Generally, poultry diseases are responsible for a number of adverse economic effects due

to mortality and morbidity of chickens, cost of medication, miscarriage in production, international trade ban and public health significance [9].

There is increasing demand for poultry and poultry products in and around the study area due to increased population growth and urbanization. To fulfill the demand there is also growing establishment of commercial farms which supply meat directly the customers or supply pullets to smallholder farmers in the town or around, but challenged by several hindrance factors which result in mortality of chicken. Limited works were conducted on major causes of poultry loss, clinical and gross pathological study on chicken diseases in commercial poultry farms in the country in general [5, 10]; however, no research conducted in the study site in particular.

Despite their geographical limitation, they concentrate on studying up on specific disease. Thus, it is important to investigate major causes of chicken mortality to propose appropriate strategies to boost the growing industry with appropriate recommendations. Therefore this study was conducted to assess major causes of chicken mortality in the study area; characterize major clinical findings and gross pathological lesions and investigate common parasites species involved from suspected cases in Wolaita Sodo poultry farms.

## **MATERIALS AND METHODS**

**Study Area and Animals:** The study was conducted from November, 2016 to May, 2017 at Wolaita Sodo town commercial poultry farms. The town is located 313 km away from Addis Ababa, in Southern direction. The absolute location of the town is 6°54'N latitude and 37°45'E longitude with altitude of 1600 m.a.s.l. The area experiences mean annual temperature of about 20°C. The mean annual rain fall of the area ranges from 1100-1446 mm [11] According to CSA [12] the zone comprises about 1, 019, 677 poultry which was majorly by traditional chicken production.

However traditional chicken production is still the most dominant production system in the area, there are some initiations for introduction of exotic and cross breed chicken around urban areas of Wolaita zone. In Wolaita Sodo, capital of the zone, there are small numbers of semi-intensive and intensive poultry farms which have been trying to supply egg and grower chickens to the zone and some neighboring areas. Among these commercial poultry farms, three commercial farms (two private and one government) were considered in the study based on actively engagement in the business and willingness of the farm owners (Farm A, B and C).

The first farm (Farm A) comprises about 800 Bovans Brown breed of chicken which are managed intensively for the purpose of egg production. The other poultry layers farm is intensive managed (Farm B) comprises of about 25, 000 Sasso T44 layer chickens comprising of three age batches. At the beginning of the study, the first, second and third batches were 43, 39 and 33 weeks old, respectively. The third poultry farm considered (Farm C) which has been working on brooding of Sasso T44 breeds and sells pullets for smallholder, governmental organization and non-governmental organization. The farm recruits about one batch with maximum of 3000 chicks at a time. There are also 110 layer Sasso T44 breed chickens in the farm.

The research work was conducted in whole poultry population of two of the farms (A and C); whereas, in farm C the research was partially done. Therefore, a total of 5800 chickens (about 2, 110 layer and 2, 890 brooding chicks) were included in the study at the beginning. Chickens in isolation room were held under careful follow up and necropsy was conducted on 50 dead chickens, of which 17 chickens were from farm C, 16 chickens were from farm A and 17 chickens were from farm B for the post mortum study.

**Study Design and Data Collection:** Longitudinal follow up study was carried out by visiting each farm twice a week for six months to assess the general health status and to follow up the mortality cases with diseased chicken in isolation pen were under further careful close supervision. Moreover, among the mortality cases clinical presentations were recorded and postmortem examination was conducted during the visiting days by transporting the recently dead animals from the farms to Wolaita Sodo University School of Veterinary Medicine pathology laboratory. To catch up all mortality rate and causes of chicken loss, secondary data were also collected from health and mortality record of each farm by consultation of veterinarian in charge during the follow up days.

### **Study Methodology**

**General Farm Assessment:** Observational farm follow up assessment was made to evaluate general condition and managerial practices including feeding, housing, bedding, watering, fencing, vaccination and other biosecurity measures were assessed at the beginning of the study as well as during farm visitation hours.

**Clinical Study:** Chickens showing any kind of illness or in the isolation room were closely examined for any clinical signs or occurrence of mortality in the herd. The examination includes assessment of general appearance,

behavior, feathering, pigmentation of skin, visible mucous membrane, physical injuries, appearance of comb, wattle, eyes, feces (Droppings), nasal or respiratory discharges, respiration, gait, leg (Joint deformities) and other signs of a diseases.

**Postmortem Examination:** Necropsy examination was carried out on dead chickens based on standard gross pathology/necropsy examination [13]. After detail external examination the carcass was placed on its back with the legs towards the examiner. The skin is incised transversely behind the xyphoid process and the incision is extended towards both knees. The skin is removed over the pectoral muscles by pulling in a cranial direction. Transverse incision is made behind the xyphoid process to open into the thoracic cavity and organs in the cavity were examined routinely. Sternum with pectoral muscles was cut and rotated upwards and cranially to expose the abdominal cavities and organs in the cavity were also examined. Other tissues and organs like sciatic nerve were also examined accordingly and the whole post mortem procedure.

**Parasitological Examination:** Fecal samples were collected during the study period and transported to Wolaita Sodo university school of veterinary medicine parasitology laboratory by coded and formalin containing plastic bottles. And the fecal samples were examined for internal parasite eggs by fecal floatation technique according to Zajac and Conboy [14]. After arriving to the laboratory samples were kept in refrigerator at 4°C. Floatation fluid was prepared by dissolving 400 gm of common salt in 1000 ml of water. According to their code number each samples were crashed and mixed well with the floatation fluid in the mortar. Then after removal of debris, the solution was poured to test tube until it makes a convex shape. Cover slip was applied on the top of each test tube for 20 minutes and examined by microscope for nematode and protozoa parasite egg under 10X magnification.

**Data Analysis:** The data collected were coded and entered into Microsoft Excel and descriptive statistics was utilized to summarize the data using Statistical Program for Social Science (SPSS) software version 20. The result of the descriptive analysis was mentioned in terms of frequency and percentage. Chi-square test was also used to assess if there were a statistically significant difference between breeds and cannibalism, age of chickens and parasite, farm condition and mortality. For this analysis p

-value less than 0.05 was considered as statistically significant whereas p-value greater than 0.05 considered as non-significant.

## RESULTS

**General Farm Management and Biosecurity Measures:** Housing of all the three farms was closed type of housing with east to west alignment except farm C, which aligned north to south. The floor of each farm was concrete and commonly used litter was wood shaving. The litter absorbs any waste material excreted from the chicken and makes the house dry. The feeding system of farms B and C was completely on concentrate supplied from ethiochicken poultry meal processing unit, but in poultry farm A chickens are supplied with some proteins sources like *alfaalfa* from the farm backyard in addition to concentrate feed. Chickens in the three farms were supplied with clean tap water from pipe in the town.

They all fenced tightly to prevent entrance of domestic animals and birds. At the main gate and entrance of poultry house had dipping with common chemicals such as copper sulphate, formalin and locally available antiseptic powders mixed in tap water. Clean protective cloths were also available for those allowed to enter in to the poultry houses. The vaccinations against common and catastrophic diseases like Newcastle disease (both the HV-1 and lasota), infectious bursal disease (IBD), fowl pox, Marek's disease and fowl typhoid was also routine practice in all the farms.

**Major Causes of Chicken Mortality:** A total of 5800 chickens were incorporated in the study from three commercial poultry farms. During the study period 403 deaths were recorded with cumulative mortality of 6.94%. Major causes of chicken mortality recorded for the following infectious and noninfectious management related factors as it is indicated on figure 1 with highest rank for diseases accounting 66%(266); followed by 11.2%(45) mismanagement (confinement, poor ventilation and inadequate feed and water supply); 6.9% (28) accident (poor maintenance of electrical equipment like heater); 6.5% (26) cannibalism and 9.4%(38) some other (culling due to congenital defect, very poor growth) factors.

Cumulative mortality, death due to disease and cannibalism in among farms, breeds and age was shown on Table 1. Farm level mortality was 7.25, 4.15 and 8.73 in farms A, B and C, respectively. There was statistically significant difference in cumulative mortality

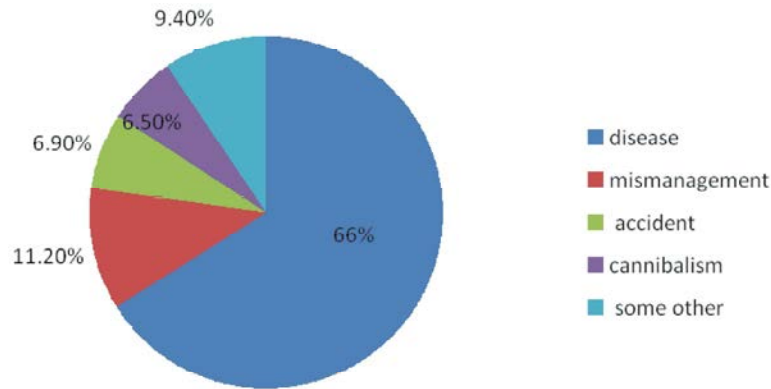


Fig. 1: Major causes of chicken mortality in three comercial poultry farms in Wolaita Sodo town

Table 1: Cumulative mortality, death due to disease and cannibalism in different farms, breeds and age

Variables		Mortality (%)	$\chi^2$ (p-value)	Disease (%)	$\chi^2$ (p-value)	Cannibalism (%)	$\chi^2$ (p-value)
Farm	A	59 (14.5%)		47 (17.6%)		1 (3.85%)	8.718 (0.013)
	B	83 (20.5%)		57 (21.4%)		11 (42.35%)	
	C	262 (65%)	38.923 (0.000)	162 (61%)	8.863 (0.12)	14 (53.8%)	
Breed	Sasso	345 (85.6%)	0.038 (0.846)	219 (82.3%)	7.755 (0.057)	25 (96.2%)	2.346 (0.126)
	Bovans brown	59 (14.39%)		47 (17.7%)		1 (3.8%)	
Age	Young	303 (75.2%)	186.440 (0.000)	209 (78.6%)	5.625 (0.018)	25 (96.2)	6.549 (0.01)
	Adult	100 (24.8)		57 (21.4%)		1 (3.8%)	

Table 2: Major clinical signs observed during the study, N=50

No	Clinical signs observed	Frequency	Percent
1	Depression	24	48%
2	Diarrhea	22	44%
3	Ruffled feather	17	34%
4	Poor growth and body condition	18	34%
5	Paralysis	6	12%
6	Nasal discharge	7	14%
7	Cyanotic comb	8	16%
8	Swollen wattle	4	8%
9	Swollen joint	5	10%
10	Sudden death	5	10%



Fig. 2: Different clinical signs and conditions observed: Torticollis(a), Wing paralysis(b), Depression(c), Cyanotic comb(d), swollen joint(e), Ruffled feather(f)

Table 3: Major gross pathological findings in different systems and organs, N=50

Organs	Necropsy findings	Frequency	Percent (%)
Liver		20	40
	Focal necrosis	9	45
	Fatty liver (pale or yellowish)	6	30
	Hemorrhagic with Bulged cut surface	5	25
Spleen		8	8
	Edematous	4	50
	Hemorrhagic	4	50
Bursa of fabricus		4	8
	Hemorrhagic and enlarged	2	50
	Enlarged	2	50
Skeletal muscle		8	16%
	Petechial Hemorrhage	3	37.5
	Nodules	5	62.5
Trachea		15	30
	Petechial Hemorrhage	14	93.3
	Mucoid discharge	1	6.7
Lung		7	14
	Focal and fibrinous necrosis	5	71.4
	Congested and hemorrhagic	2	28.6
Air sac	Air sacculitis	6	12
Heart		4	8
	Excessive fat deposition	2	50
	myocardial and pericardial necrosis	2	50
Spleens		8	16
	Swollen	4	50
	Hemorrhagic	4	50
Kidneys		6	12
	Focal necrosis,	3	50
	Petechial hemorrhage	2	33.3
	edematous kidney	1	16.7
Bursa of fabricius		4	8
	Hemorrhagic and enlarged	2	50
	Enlarged but not hemorrhagic	2	50
Ovaries	Hemorrhagic follicles	6	18.75
Esophagus	Hemorrhagic	3	6

and cannibalism among three farms and ( $p < 0.05$ ). Death due to disease, cannibalism and cumulative mortality had statistically significant association between young and adult group of chickens ( $p < 0.05$ ).

**Clinical Signs and Gross Pathological Findings:** Prior to necropsy examination, clinical physical examination was performed on chickens in isolation room of the three farms for any clinical sign caused by diseases, except suddenly dead chicken. Accordingly, depression, diarrhea (watery and bloody), ruffled feather, poor growth and body condition were recorded as major clinical signs registered and illustrated on Table 2. Moreover, some other clinical finding such as paralysis (wing, leg, torticollis), nasal discharge, cyanosis of comb, swollen wattle, sudden death were also recorded as were found to be the less common clinical signs manifested by the chickens in the study area as shown on Table 2 and some

of the common clinical signs presented during the study period were taken pictures as it was demonstrated on Figure 2.

Necropsy examination conducted on 50 dead chickens revealed the presence of various gross lesions in intestine, liver, trachea, spleen, skeletal muscle, lung, kidney, esophagus, crop, ovarian follicles, proventriculus, gizzard, heart, bursa of fabricius and sciatic nerve as illustrated on Table 3.

Fifty trachea were examined grossly and out of that 15(30%) were found to have gross pathological lesions, of which, 14(93.3%) were petechial hemorrhage and 1(6.7%) is occluded by mucoid discharge. Of the total of lung examined grossly and 7(14%) were had gross lesion in which, 5(71.4%) were focal and fibrinous necrosis and 2(28.6%) were congested and hemorrhagic. Air sacculitis with cloudy appearance encountered in 6 (12%) chickens that undertaken post mortem examination.

Table 4: Major gross pathological findings in the digestive system, N=50

No	Organs	Necropsy findings	Frequency	Percent (%)
1	Proventriculus	Hemorrhagic	5	10%
2	Small intestine		15	30%
	Duodenum	Edematous and thickened wall	4	26.6%
		Hemorrhagic	6	40%
		Inflamed, Necrotized	5	33.4%
	Jejunum		17	34%
		Edematous and thickened wall	3	17.6%
		Hemorrhagic	8	47%
		Inflamed, Necrotized	4	23.5%
		Adult <i>Ascaridia galli</i>	2	11.8%
	Ileum		20	40%
		Hemorrhagic	13	65%
		Edematous and thickened wall	3	15%
		Inflamed, Necrotized	4	20%
3	Cecum		19	38%
		Edematous and thickened wall	8	42%
		Hemorrhagic and congested	11	58%

Table 5: List of internal parasites identified during the necropsy examination, N=50

No	Internal parasite identified	Samples examined	Frequency	Percent
1	<i>Coccidia</i> spp.	50	9	18
2	<i>Ascaridia galli</i>	50	5	10
3	<i>Heterakis gallinae</i>	50	4	8

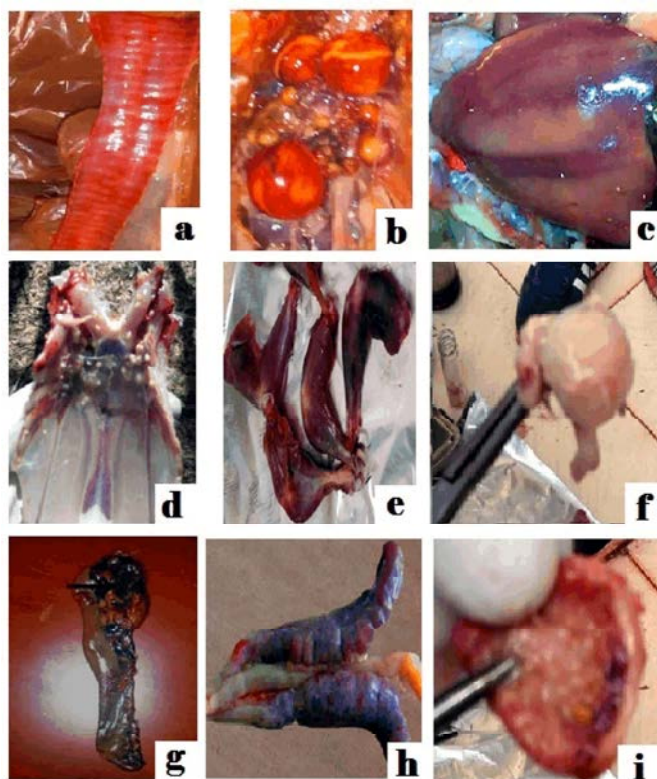


Fig. 3: Gross pathological findings observed during the study: hemorrhagic trachea(a), hemorrhagic follicles(b), pale liver(c), nodules on pectoral muscle(d), hemorrhagic thigh muscle(e), enlarged bursa of fabricius(f), necrotic and ruptured duodenum(g), edematous and hemorrhagic cecum(h), hemorrhagic proventriculus(i)

A total of 20(40%) of liver were found to have gross pathological lesion, of which, 9(45%) were multi focal necrosis, 6(30%) were fatty liver and paleness, 5(25%) were hemorrhagic with bulged cut surface. Only 4(8%) hearts were observed to have gross lesions, of these, 2(50%) were excessive fat deposition and 2(50%) were focal myocardial and pericardial necrosis. Of the spleens examined grossly, 8 (16%) found to have gross lesion, of which, 4(50%) were swollen and 4(50%) were hemorrhagic. Out of 50 kidneys 6 (12%) were have gross lesions, of which, 3(50%) focal necrosis, 2(33.3%) were petechial hemorrhage and 1(16.7%) was edematous kidney.

The skeletal muscle examination revealed that 8(16%) muscle tissues having gross lesion, of which, 5(62.5%) were nodular lesions and 3(37.5%) were petechial hemorrhage. Thickening of sciatic nerve was observed on 1(2%) chicken among 50 chickens. Among 50 chickens 4(8%) were found to have gross pathological lesion on bursa of fabricius, of which 2(50%) were hemorrhagic and enlarged whereas 2(50) were enlarged but not hemorrhagic. Gross examination of 32 matured female chicken ovaries revealed hemorrhagic follicles in 6(18.75%) layers.

Necropsy study of the gastro intestinal tract also revealed several gross lesions and indicated on Table 4 and Figure 3. Out of 50 esophagi examined and 3(6%) esophagus were found to appear hemorrhagic. Five (10%) of crop, proventriculus and gizzards out of inspected appeared hemorrhagic. Among small intestine parts, 15(30%) duodenum were found to have gross pathological lesions, of which, 4(26.6%) were edematous and thickened wall, 6(40%) were hemorrhagic and 5(33.4%) were inflamed and/or necrotized. Out of examined jejunums 17 (34%) were found to have gross pathological lesions, of which, 3(17.65%) were edematous and thickened wall, 8(47%) were hemorrhagic, 4(23.5%) were inflamed and/or necrotic and adult *Ascardiagalli* parasite was observed in the jejunum of 2 chickens. Gross examination of ileum revealed that 20(40%) ileum having gross pathological lesions, of which, 13(65%) were hemorrhagic, 3(15%) were edematous and thickened wall, 4(20%) were inflamed and/or necrotized. Out of 50 grossly examined cecum, 19(38%) were found to have gross pathological lesions, of which, 11(58%) were hemorrhagic and 8(42%) were edematous and thickened wall.

The parasitological investigation was also conducted on 50 chickens. After fecal examination 18(36%) samples were found positive, of which, 9(18%) were *Coccidia* , 5(10%) were *Ascardiagalli* and 4(8) were *Heterakis gallinae* and recorded on Table 5 below.

## DISCUSSION

The results of the present study illustrate that the cumulative mortality in commercial poultry farms in study area was 6.94% which is lower than 12% mortality rate reported by Petek [15] in Tanzania. The decline in mortality with the passage of time could probably be attributed to the awareness of people regarding disease prevention and the innovation of improved techniques and measures, than that of the pervious times and also assurance of healthy drinking water, appropriate and timely vaccination, antibiotic therapy and filtration of water tanks reduced the incidence of mortality [16]. Mortality contributed up to 56% of the number of birds that moved out of flock in the baseline survey conducted in 5004 smallholder households undertaken in four regions of Ethiopia [17].

Among the major causes of mortality, disease was the dominant cause of chicken mortality which agrees with findings of Moges et al., [18] in North West Amahara. Hailemichael et al., [17] reported that at household level more than 70% and 15% of the mortality was caused, by disease and predation, respectively. The prevalence of disease was very high in growers than layers in the current finding which agrees with the findings of Tadelle and Ogle [8] who reported disease as the most important factor in the death of chicks in the first 2 months of their life. 75.2 % of deaths in grower were due to disease. This was might be due to low adaptability of the chickens to their new environment during their arrival or it was also might be due to undeveloped immune system and stress induced immune suppression like bad weather [19].

Following disease, mismanagement was the second major cause of mortality by 11.2%. Since most of the commercial chickens are reared in confinement, various aspects of management would play an important role in prevention and control of diseases; however, it is well acknowledged that management varies from one chicken farm to another [20]. The rest mortalities were caused by accident 6.9%, cannibalism 6.5% and other causes 9.4%. Cannibalism was one of the main causes of death in indoor production systems. Data from both experimental and commercial flocks from several countries have shown that cannibalism is one of the most severe threats to poultry production in indoor litter-based housing systems [21].

In the clinical and gross pathological studies, all of the 50 chickens were found with at least one of the clinical signs, depression, diarrhea (watery and bloody), ruffled feather, poor growth and body condition,

paralysis (wing, leg, torticollis), nasal discharge, cyanosis of comb, swollen wattle, sudden death. The result of this study shows a wide range of diseases among chickens in the study area. From the total of intestines examined, duodenums were observed with different gross lesions. The most common lesions include edematous and thickened wall, inflamed and hemorrhagic appearance. Jejunum, ileum and cecum were also found to have gross pathological lesions such as edematous and thickened wall and petechial hemorrhage. These pathological changes might be due to the damaged resulted from the endo-parasites such as *Ascaris*, *Coccidia*, *Heterakis* and bacterial complications such as *E. coli* [10].

Among the fifty livers examined grossly 20(40%) were found with gross pathological lesions such as, pale and discolored, combinations of hemorrhagic and bulged cut surface with hemorrhage. Such lesions are common in diseases like Salmonellosis, Colibacillosis, Mycoplasmosis and mycobacteriosis [10]. Whitish focal tissue in liver, nodule like lesions in skeletal muscle with thickening of the sciatic nerve was observed which might be due to mareks disease [13].

There were also six cloudy thick air sacs with caeous exudates in both the thorax and air sacs which might indicate *E. coli* and chronic respiratory disease due to *Mycoplasma galisepticum*. This result has also supported by reports of 5.3% gross tuberculosis lesions in different visceral organs produced by avian mycobacteriosis in chickens from three agro-climatic areas in Ethiopia [22].

Chickens in the three farms were vaccinated against Newcastle disease, mareks disease, infectious bursal disease, fowl pox and fowl typhoid but some pathognomonic clinical signs and lesions like swollen and hemorrhagic bursa of fabricius (IBD) and thickening of sciatic nerve (MD) were investigated on five chickens. Such findings were reported in some commercial farms previously. For instances, despite the routine vaccination exercised in the biggest poultry farm, in ELFORA poultry farm, at least nine outbreaks of Newcastle disease had been reported from 1984-1995 affecting more than half million chickens and killing 20% of them [23]. Absence of research-based investigation approaches resulted in lack of knowledge of the prevalent strain of viruses and information on the overall epidemiological patterns of the different viral diseases. This has been posing a challenge especially for the success of vaccines used at these times [24].

Parasitism was also found to be the main factors that threaten chicken production and causing mortality in the area. Common poultry parasites investigated during the

study are nematode helminthes (*Ascardia galli* and *Heterakis gallinae*) and *Coccidia*. Parasitism causes reduced growth, reduced egg production, emaciation, anemia, immuno-suppression and mortality [25]. The increased occurrences of parasitic causes were due to unhygienic litter and poor practice of giving anti parasitic drugs in regular interval.

## CONCLUSIONS

The mortality rate of commercial poultry farms in Wolaita Sodo town showed significant number of chicken death due to different causes. Among mortality causes encountered, disease was the major causes of chicken mortality, followed by mismanagement, accident and cannibalism. The clinical and gross necropsy examinations also showed that, chickens in the study area are facing various health problems which hamper their productivity and causing mortality. In addition, parasitic infections play significant role in deteriorating productivity of the chickens and causing mortality. In line of the findings, managerial activities should be improved to reduce mechanical causes death and recommended to debeaking at their day old age to prevent cannibalism. Moreover, Hygienic measures and regular deworming should be adopted to control parasitic disease. Further specific study on identification of etiologic agents should be done to specifically identifying underlining diseases to implement proper prevention and control strategies.

**Conflict of Interests:** The authors state that there is no conflict of interests in the publication of this manuscript.

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