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Full length Research paper

Prevalence of Parasites on Local and Sasso Chicken in Extensive Production System in Ankober Woreda, North Shewa Zone

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The objective of this research paper was to access the prevalence of parasite on local and Sasso chicken in extensive production system in Ankober Woreda, North Shewa Zone. A Total of 441 chickens kept under different Agro-ecology, breed, chicken type, and age group was considered. The study was conducted in three agro-ecological zones of Ankober Woreda to generate information on the existing prevalence of parasites of village chickens. A multi-stage sampling procedure was followed to randomly select a total of 180 chicken owners from highland, midland, and lowland areas. A total of 441 chickens of different breed and age categories were randomly sampled to collect and identify some of the ecto and endoparasites and determine their prevalence. The overall prevalence of ectoparasites was 39.68% for skin mite, 34.92% for lice and 19.95% for fleas. While the overall prevalence of endoparasites were 18.74% for nematodesand 5.69% for cestodes. Exotic chickens (Sasso) (68.80%) were more infested than local chicken (13.38%). The result of the fecal analyses showed that of the 441 fecal samples collected and examined of the samples were collectively positive for nematode 82 (18.74%), and cestode 25(5.69%). The prevalence variations observed from nematodes and cestodes could partly be due to the chance of chickens to pick intermediate hosts from the ground.

Keywords: Agro-ecology, Breed, Cestodes, Endoparasites, Intermediate hosts, Nematodes.

INTRODUCTION

Backyard poultry production in Ethiopia represents a significant part of the national economy. Poultry production in Ethiopia is analogous to chicken production. The total chicken population was estimated at 60.04 million, from which 88.5% indigenous, 6.25% cross, and 5.25% exotic breeds (CSA, 2018).

Among chicken production system village chicken production highly practiced under rural condition due to small feed cost, space requirement, and low price (Fisseha *et al*., 2010; Aberra, 2014). Indigenous chickens also have a unique character like ideal mothers, good sitters, excellent foragers, hardy, and are believed to possess better natural immunity against common poultry diseases, have good egg and meat flavor, hard eggshells, high fertility, and hatchability (Emebet,2015). In Ethiopia different researchers found the indigenous village poultry production system, however, lack of knowledge about poultry production, limitation of feed resources, and prevalence of diseases and predator remains to be the major challenges in village-based chicken productions (Fisseha *et al*., 2010).

Introduction of exotic chicken is inevitable and there has been a substantial effort to improve hybrid layer chickens particularly Sasso to smallholder farmers under the backyard management system in Ankober Woreda. The aim of this research paper was to assess the prevalence

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of some external and internal parasites of local and Sasso chicken under extensive management system in Ankober Woreda.

MATERIALS AND METHODS

Description of the Study Area

The study was conducted at Ankober Woreda, which was one of the Woreda in North Shewa Zone of the Amhara Region. Gorebela townis the center of Ankober Woreda located at about 172 km from Addis Ababa, 735 km far from Bahir Dar the capital city of the Amhara National Regional State and 42km from Debre Berhan the capital city of North Shewa Zone. The Woreda covers an area of 69,306 hectares with a human population of around 93,329 (Woreda agricultural office report, 2019). In the Woreda, there are many loges such as Wosenseged, Likemarefya, and Wofwasha. The altitude ranges between 1300 and 3700 meters above sea level. The mean minimum and maximum annual rainfall are bout 731mm and 979mm, respectively. The mean minimum and maximum temperatures are 4.3°C and 23.4°C, respectively.

The Woreda hasa chicken's population of 67208 local chickens, 41,000 exotic (Sasso) chickens(Woreda agricultural office report, 2019).

The woreda is characterized by two seasons, the wet season from June to September and a dry season from October to May.

The farming system in the area is predominantly mixed crop-livestock production systems. The woredais classified into highland (>2500 masl), midland (1500-2500 masl), and lowland (<1500 masl) AEZ. The Woreda has 19 kebeles with different agro-ecological zones comprising of 6 lowlands, 8 midlands, and 5 highland kebeles (Woreda Agricultural Office Report, 2019).

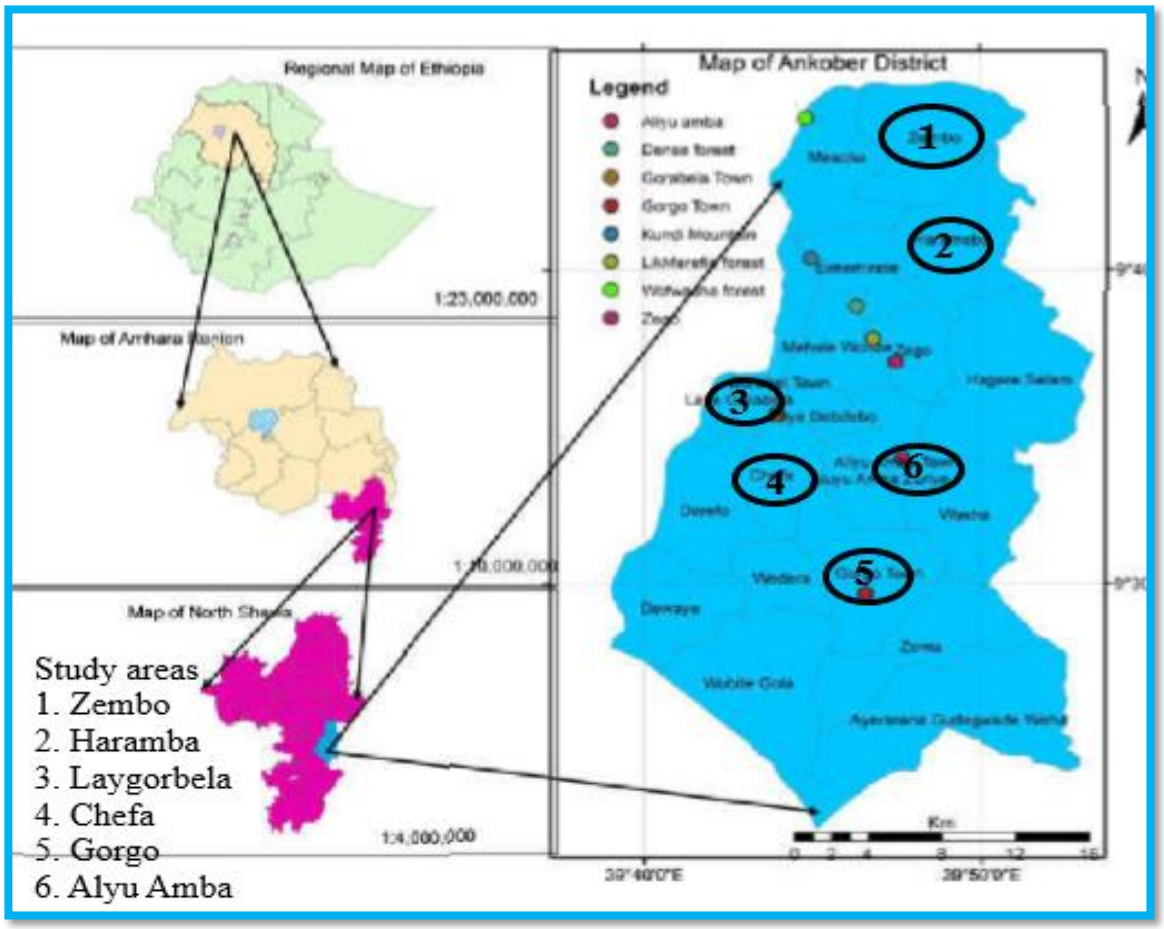

Figure 1: Map of the study area. Source: (Administration Office, 2015).

Research Design and Study Populations

The study employed a household survey and observational studies. The poultry producers and village chickens in Ankober Woreda were the study populations. A cross-sectional survey was conducted to collect data from selected households. Households keeping chicken were the sampling units. Randomly sampled chickens of different breeds and ages taken from the flocks owned by respondents were examined for both internal and external parasites.

Sampling Procedure and Sample Size

A multi-stage sampling procedure was followed to select respondent farmers. First Kebeles in the Woreda were clustered based on agro-ecologies. Six representative kebeles were selected and two from each AEZ with the criteria of village poultry production potential. In the second stage, 180 sample households were selected randomly from the list of farmers keeping chickens. The sample households included in the study were determined according to the formula given by Arsham (2005).

$N=0.25/SE^2$

Where N= Sample size, SE= Standard error

Then, using the standard error of 0.038 with a 95% confidence level (Desalew, 2012), 180 households were included in the study.

The numbers of respondents (farmers) per single kebele are determining by the proportionate sampling technique as follows (https://books.google.com.et/booksisbn).

W= [A/B] x No

Where;

W= Sample of farmers determines per single selecting kebele.

A = Total number of households (farmers) living per single selected kebele.

B = Total sum of households living in all sample kebeles.

No = the total required calculated sample size of the population.

Table 1: Village chicken producers and sample households in each AEZ of the selected kebeles

Agro-ecology	Kebele	village chicken producers	sample households
Highland	Laygorebla	4031	23
	Chefa	4118	23
Midland	Gorgo	6394	37
	Harmba	6050	33
Lowland	Zenbo	5552	31
	Alyuanba	5729	33

Methods of Data Collection

Observational study

A cross-sectional study was employed for both external and internal parasites by using a systematic random sampling technique. Examination of external and internal parasites was conducted on different breeds and age groups of chickens kept in the farmyards of participant households of the study. Systematically selected chicken from sampled households were used for both internal and external parasite examination. Prevalence calculation was conducted according to Thrusfield (2007) as follows: The prevalence of different parasites among examined village chicken was estimated by dividing the number of infected village chicken for each parasites disease by the total number of examined village chicken then multiplies by 100.

Examination of ectoparasites

After a detailed physical and clinical examination of randomly selected chicken, samples were taken from vent, neck, back, and wing and examined by the naked eye using hand lenses. A systematic approach was followed to detect ectoparasites like; Lice, ticks, skin mites, and fleas were collected from hosts by parting the hairs or feathers and skin, gently collecting the base of the feathers to prevent the chicken from injuries and some of them were collected by handpicking and non-toothed thumb forceps and for samples, mites were collected by sweeping the skin and feather. Generally, during the examination, indigenous chicken's legs were tied up with the help of an assistant, and individual feathers are manually checked to observe the presence of the parasite. Also, chicken houses were checked in the early morning and during the night time to ensure the presence of parasites with nocturnal activities. After collection of the parasite, stereomicroscope was used to identify their morphological characteristics using entomological keys according to the consultation of

standard books such as (Sauls, 1982; Williams, 2010; Assefa*et al*., 2017).

Examination of endoparasites

Fecal samples were collected based on age (chicks, growers, and adults) and breed (local and exotic (Sasso)) of village chicken. Freshly voided fecal samples were collected from sampled chicken. After collection, fecal samples were stored in the icebox until further analysis to prevent the eggs of the parasite from hatching.The study used flotation and sedimentation techniques; which are a simple qualitative technique for the detection of nematode, cestode, and trematodes eggs in the feces (Dikeledi *et al*., 2016).

Data Analysis

The data were entered using Microsoft Excel spreadsheets and analyzed using SPSS (Version, 24). The descriptive statistics were employed for prevalence of parasites in the Woreda. Agro-ecology and breed used as a fixed factor-alpha 0.05 mean separation were done by Tukey test.

Statistical model for Survey:

Yij = μ + Ai+ Bj +ABij + Ɛij
Where: Yij – the value of the respective variable
μ – Overall means of the respective variable
Ai – the fixed effect of agro-ecology on the respective variable
Bj – breed effect
AB- interaction effect of the breed by agro-ecology
Ɛij – random error NID (mean =0, and σ^2= 1)

RESULTS AND DISCUSSION

Prevalence of Ectoparasites and Endoparasites

Prevalence of ectoparasites

Total of 441 chicken kept under different Agro-ecology, breed, and chicken type age group was considered for the present study.

The current overall prevalence of chicken ectoparasites (95.91%) is higher than 91.50% of Belihu*et al*. (2010) report but lower than prevalence rate of 100% by Bala *et al.,* 2011 were recorded in East Shewa zone Ethiopia. Similarly, it was higher than the prevalence rate of 86.67% Shanta *et al*. (2010) were recorded in Nigeria.

The difference between the current and previous findings may be due to breed, management, agro-ecological and implemented methods of the disease control and prevention.

According to the present study, the highest prevalent external parasites were skin mite the most prevalent (39.68%); followed by lice infestation (34.92%), while stick tight fleas (19.95%) and tick (1.36%) was the least prevalent respectively.

This prevalence was low compared to findings by Permin *et al.*(2002)who reported low prevalence rates ofskin mite 32% chicken, Maina (2005)lice infestation (24%), and Mungube *et al.* (2008)tick (13.30%).

The variation in prevalencelikely due to geographic difference and management system between the study areas.

Table 2: The overall prevalence of ectoparasites

Ectoparasites	No examined	No positive	Prevalence (%)
Skin Mite	441	175	39.68%
Lice	441	154	34.92%
Flea	441	88	19.95%
Tick	441	6	1.36%
Total	441	423	95.91%

Lice Infestation in Chicken:

In the present study, 34.92% of chicken were infested by lice on one or more of their body surfaces like backside, chest and inside the wing presented in Table 3. The overall prevalence of lice was higher among adult chicken (41.60%) than in young growers (32.43%), followed by chicken (4.65%)presented in Table 3. Lice infestation was higher in low land with the adult exotic breed of bird. The lice were the second most prevalent identified in the study area. The lice prevalence much lower than the findings of authors in Kenya by Sabuni *et al*. (2010) and Sadiq *et al.* (2003) from Nigeria and also disagreed with Belihu*et al*. (2010) and Mekuria Solomon and Elsabet Gezahegn (2010) who reported 90%, 72.72%, 84.30%, and 88%, respectively from Ethiopia. The relatively low prevalence of lice in the current study may be due to the management system and other agro-ecological factors.

Exotic breed chickens (Sasso) (68.80%) were more infested

than local breed chicken (13.38%).
These findings are in disagree with those from studies in Fraol *et al.* (2014)who reported that 87.55% local breed was more infested than exotic breed chicken (Sasso)26.40% and comparable report with present study similarly lower than Biu *et al.*(2007)who reported (28.20%) in the local breed. The exotic breed chicken (Sasso)is almost kept indoor but during free-range management system more vulnerable to ectoparasites than local breed.

Table 3: Summary of data and distribution of lice with associated risk factor

Agro-ecology	Breed	Age group	No of examined	No of Positive	Prevalence%	Predilection site
High land	Local	Chicks	12	0	0	
		Growers	25	6	24	
		Adults	32	11	34.38	
	Exotic	Chicks	0	0	0	
		Growers	11	5	45.45	
		Adults	35	21	60	
Mid land	Local	Chicks	17	1	5.88	
		Growers	35	3	8.57	
		Adults	56	5	8.93	Backside,
	Exotic	Chicks	0	0	0	chest and
		Growers	26	15	57.69	inside the wing
		Adults	48	36	75	
Low land	Local	Chicks	14	1	7.14	
		Growers	30	3	10	
		Adults	48	6	12.50	
	Exotic	Chicks	0	0	0	
		Growers	21	16	76.19	
		Adults	31	25	80.65	
Overall	Local	Chicks	43	2	4.65	
		Growers	90	12	13.33	
		Adults	136	22	16.18	
		Total	269	36	13.38	
	Exotic	Chicks	0	0	0	
		Growers	58	36	62.07	
		Adults	114	82	71.93	
		Total	172	118	68.60	
	Total	Chicks	43	2	4.65	
		Growers	148	48	32.43	
		Adults	250	104	41.60	

Skin Mite Infestation:

In this study, (39.68%) chickens were found to have mites on their body surface, lower limb, or the legs shown in Table 4. The occurrence of mites was more infested adult chicken (53.60%), followed by chicks (27.91%) and less infested to growers (19.59%) shown in Table 4. It was higher in local chicken (41.64%) than exotic chicken (Sasso) (36.63%) The current study was higher than Assefa*et al*. (2017) reported by 8.85% of chicken were found to have mites on their body surface and the legs in and around Jimma town.

Table 4: Summary of data and distribution of skin mite with associated risk factor

Agro-ecology	Breed	Age group	No of examined	No of Positive	Prevalence%	Predilection site
High land	Local	Chicks	12	4	33.33	
		Growers	25	7	28	
		Adults	32	19	59.38	
	Exotic	Chicks	0	0	0	
		Growers	11	3	27.27	
		Adults	35	26	74.29	Lower limb
Mid land	Local	Chicks	17	6	35.29	
		Growers	35	4	11.43	
		Adults	56	31	55.36	
	Exotic	Chicks	0	0	0	
		Growers	26	5	19.23	
		Adults	48	18	37.50	
Low land	Local	Chicks	14	2	14.29	
		Growers	30	9	30	
		Adults	48	30	62.50	
	Exotic	Chicks	0	0	0	
		Growers	21	1	4.76	
		Adults	31	10	32.26	
Overall	Local	Chicks	43	12	27.91	
		Growers	90	20	22.22	
		Adults	136	80	58.81	
		Total	269	112	41.64	
	Exotic	Chicks	0	0	0	
		Growers	58	9	15.52	
		Adults	114	54	47.37	
		Total	172	63	36.63	
	Total	Chicks	43	12	27.91	
		Growers	148	29	19.59	
		Adults	250	134	53.60	
		Total	441	175	39.68	

Flea Infestation:

The common chicken fleas in the study area were the stick tight flea was found to have around the eye, comb, and wattle. The overall prevalence of fleas was 19.95% shown in Table 5. The prevalence was higher in adult chicken (22.80%) compared to young growers (6.76%) followed by chicks (2.33%). Higher in local chicken (16.36%) than exotic chicken (Sasso) (13.95%) (Table 5)

The exotic type of bird was more infested at high land and midland whereas local was more infested at low landstudy area. The current study was comparable with Assefa Kebede *et al*. (2017) with the overall prevalence of fleas was 16.15%.

And he also found higher prevalence in adult chicken (10.09%) as compared to young growers (5.20%) in and around Jimma town.

Table 5: Summary of data and distribution of flea with associated risk factor

Agro-ecology	Breed	Age group	No of examined	No of Positive	Prevalence%	Predilection site
High land	Local	Chicks	12	0	0	
		Growers	25	4	16	
		Adults	32	6	18.75	
	Exotic	Chicks	0	0	0	
		Growers	11	0	0	
		Adults	35	12	34.29	
Mid land	Local	Chicks	17	0	0	
		Growers	35	0	0	Around the eye, comb and Wattle
		Adults	56	5	8.93	
	Exotic	Chicks	0	0	0	
		Growers	26	1	3.85	
		Adults	48	8	16.67	
Low land	Local	Chicks	14	1	7.14	
		Growers	30	5	16.67	
		Adults	48	23	47.92	
	Exotic	Chicks	0	0	0	
		Growers	21	0	0	
		Adults	31	3	9.68	
Overall	Local	Chicks	43	1	2.33	
		Growers	90	9	10	
		Adults	136	34	25	
		Total	269	44	16.36	
	Exotic	Chicks	0	0	0	
		Growers	58	1	1.72	
		Adults	114	23	20.18	
		Total	172	24	13.95	
	Total	Chicks	43	1	2.33	
		Growers	148	10	6.76	
		Adults	250	57	22.80	
		Total	441	68	15.42	

Tick Infestation:

In this study, 1.36% of chicken was found to have ticks on their body surface, Ventral abdomen showed inTable 6. All the parasite tick was found in the lowland area on the adult chicken type.

Table 6: Summary of data and distribution of tick with associated risk factor

Agro-ecology	Breed	Age group	No of examined	No of Positive	Prevalence%	Predilection site
High land	Local	Chicks	12	0	0	
		Growers	25	0	0	
		Adults	32	0	0	
	Exotic	Chicks	0	0	0	
		Growers	11	0	0	
		Adults	35	0	0	
Mid land	Local	Chicks	17	0	0	
		Growers	35	0	0	
		Adults	56	0	0	
	Exotic	Chicks	0	0	0	
		Growers	26	0	0	
		Adults	48	0	0	Ventral abdomen
Low land	Local	Chicks	14	0	0	
		Growers	30	0	0	
		Adults	48	3	6.25	
	Exotic	Chicks	0	0	0	
		Growers	21	0	0	
		Adults	31	3	9.68	
Overall	Local	Chicks	43	0	0	
		Growers	90	0	0	
		Adults	136	3	2.21	
		Total	269	3	1.12	
	Exotic	Chicks	0	0	0	
		Growers	58	0	0	
		Adults	114	3	2.63	
		Total	172	3	1.74	
	Total	Chicks	43	0	0	
		Growers	148	0	0	
		Adults	250	6	2.40	
		Total	441	6	1.36	

Mixed ectoparasites infestation:

As indicated in the Table 7 below exotic chicken was more infested by the external parasite. Among mixedectoparasitesflea and lice was higher (9.30%) on exotic chicken followed by mite and lice (7.56%). Whereas local chicken was highly infested by mite and flea (10.04%) followed by mite and lice (4.83%). In total mite and flea was higher (17.02%).

Table 7: Overall prevalence of mixed parasite infestation on village chicken production

Breeds	No of examined	No of positive	Prevalence (%)
Local breed			
Mite and flea	269	27	10.04
Mite and lice	269	13	4.83
Mite and tick	269	2	0.74
Flea and lice	269	5	1.86
Flea and tick	269	0	0
Lice and tick	269	1	0.37
Mite, flea and lice	269	2	0.74
Flea, lice and tick	269	0	0
Exotic breed			
Mite and flea	172	12	6.98
Mite and lice	172	13	7.56
Mite and tick	172	2	1.16
Flea and lice	172	16	9.30
Flea and tick	172	1	0.58
Lice and tick	172	3	1.74
Mite, flea and lice	172	6	3.49
Flea, lice and tick	172	1	0.58

Prevalence of endoparasites

The result of the fecal analyses showed that of the 441 fecal samples collected and examined of the samples were collectively positive for nematode 82 (18.74%), and cestode 25(5.69%). These figures were distantly lower than Mungube *et al*. (2008) reported from central Ethiopia (86.32%, 75.79%) and Nairobi Country, Kenya (74.40%, 68.1%) from nematodeand cestode infections, respectively. The prevalence variations observed fromnematodesand cestodes could partly be due to the chance of chickens to pick intermediate hosts from the ground. Besides, there are differences among the country's agro ecological and local environment. There are no trematodes parasites during the fecal examination this in agreement with findings of Giwa local government, Nigeria and Mbeere sub county, Kenya Junaidu *et al*. (2014)Chege *et al*. (2015). However, trematodes were recorded from Kiambu and Nairobi, Kenya Kyalo (2015). This difference could be due to the absence of snail, the intermediate hosts responsible for their transmission.The result revealed that nematode *Ascaridia gallii* and *Syngamus trachae* had the highest prevalence of infection in both local and exotic breeds (Sasso). The species of GI nematodes recorded from the fecal examination were *Ascaridia gallii* (9.98%), *Syngamus trachae* (5.22%), *Capillaria spp* (2.27%) and *Heterakis gallinarum* (1.13%) in order of importance (Tables 8).

Overall prevalence of nematodes was 18.59% This finding was lower than previous reports of Hirut (2009),and Matur *et al.*(2010) who reported a prevalence of 59.64% and 53% in Ethiopia and Nigeria respectively. However, the prevalence of *Ascaridia galli* was much lower than the previously reported works in central Ethiopia by Ashenafi(55.26%) and 38% byTesfaheywet*et al*. (2012) from Haramaya. The prevalence of *Heterakis* species (1.13%) in this study was lower than other studies in Ethiopia Eshetu*et al*. (2001) (4.30%) and Kaingu *et al*. (2010) (1.43%) in Kenya. This might be due to differences in de-worming practice, management systems, and/or agro-ecological conditions of the study area.

In the present study, the prevalence of infection in the local breed (15.99%) was lower than the exotic breed (Sasso) (22.67%) in this agreement with the previous study conducted in Nigeria by Matur *et al*. (2010) in local breed chickens (90.20%) higher than the exotic breed (Sasso) (53%). A higher prevalence of GI nematode infection rate was observed in adult chickens (21.20%) followed by grower chickens (16.89%). The result obtained was contrary to the previous study of (Permin *et al*., 1999) who reported a higher level of GI nematode prevalence in grower chickens. In the present study mixed endoparasites infestation was not observed in both breed of chicken.

Table 8: The overall prevalence of gastro-intestinal nematode and cestode parasites of Chickens from the study area

Endo parasite		No. examined	No. positive	Prevalence (%)
Nematode	**Species**			
	Ascaridia galli	441	44	9.98%
	Capillaria spp	441	10	2.27%
	Heterakis spp	441	5	1.13%
	Syngamus Trachae	441	23	5.22%
	Total	441	82	18.59%
Cestode	Species			
	Relliatina spp	441	***5***	1.13%
	Hymnolepis spp	441	12	2.72%
	Total	441	17	3.85%

Table9: Agro-ecology, breed and chicken type-wise prevalence of nematode

Agro-ecology	Breed	Age group	No of examined	No of Positive	Prevalence%
High land	Local	Chicks	12	0	0
		Growers	25	4	16
		Adults	32	6	18.75
	Exotic	Chicks	0	0	0
		Growers	11	2	18.18
		Adults	35	11	31.43
Mid land	Local	Chicks	17	2	11.76
		Growers	35	7	20
		Adults	56	11	19.64
	Exotic	Chicks	0	0	0
		Growers	26	4	15.38
		Adults	48	12	25
Low land	Local	Chicks	14	2	14.29
		Growers	30	4	13.33
		Adults	48	7	14.58
	Exotic	Chicks	0	0	0
		Growers	21	4	19.05
		Adults	31	6	19.35
Overall	Local	Chicks	43	4	9.30
		Growers	90	15	16.67
		Adults	136	24	17.65
		Total	269	43	15.99
	Exotic	Chicks	0	0	0
		Growers	58	10	17.24
		Adults	114	29	25.44
		Total	172	39	22.67
	Total	Chicks	43	4	9.30
		Growers	148	25	16.89
		Adults	250	53	21.20
		Total	441	82	18.59

The most prevalent cestode species encountered in the present study was *Hymnolepis spp* (2.72%) followed by *Relliatina spp* (1.13%) presented in Table 8.Furthermore, the present finding indicates lower prevalence to Mukatirwa and Hove (2009) reported *Hymnolepis spp* (5%). In the present study, the prevalence of infection in the local breed (5.20%) was lower than the exotic breed (Sasso) (6.39%). Higher prevalence of GI cestode

infection rate was observed in adult chickens (8.40%) compared to grower chickens (2.70%) Among the cestode parasite species of chicken revealed from the current study, *Hymnolepis spp* was the most abundant one (2.72%). This was lower than that reported from Nsukka region, Nigeria (64.50%) by Idika *et al.*(2016) and the study conducted in North Gondar zone, Ethiopia, with 29.62% by Bsrat *et al*. (2014)and Iran with 6% prevalence by Eslami *et al*. (2009). This variation maybe for the difference in agro ecological condition, poultry management system, level of exposure to specific intermediate hosts. Among chicken type adults followed by growers was highly infested by cestode parasite that of chicks presented in Table 10.

Table 10: Agro-ecology, breed and chicken type-wise prevalence of cestodeparasites

Agro-ecology	Breed	Age group	No of examined	No of Positive	Prevalence%
High land	Local	Chicks	12	0	0
		Growers	25	0	0
		Adults	32	1	3.13
	Exotic	Chicks	0	0	0
		Growers	11	0	0
		Adults	35	4	11.43
Mid land	Local	Chicks	17	0	0
		Growers	35	1	2.86
		Adults	56	11	19.64
	Exotic	Chicks	0	0	0
		Growers	26	1	3.85
		Adults	48	4	8.33
Low land	Local	Chicks	14	0	0
		Growers	30	0	0
		Adults	48	1	2.08
	Exotic	Chicks	0	0	0
		Growers	21	2	9.52
		Adults	31	0	0
Overall	Local	Chicks	43	0	0
		Growers	90	1	1.11
		Adults	136	13	9.56
		Total	269	14	5.20
	Exotic	Chicks	0	0	0
		Growers	58	3	5.17
		Adults	114	8	7.02
		Total	172	11	6.39
	Total	Chicks	43	0	0
		Growers	148	4	2.70
		Adults	250	21	8.40
		Total	441	25	5.67

CONCLUSIONS AND RECOMMENDATIONS

The overall prevalence of ectoparasites like skin mite 39.68%, lice 34.92%, flea 19.95% and the overall prevalence of endoparasites like Nematode (*Ascardia galli* 9.98%, *Syngamus trachea* 5.22%, *Capillaria spp* 2.27%, *Heterakis spp* 1.13%) and Cestode *(Hymnolepis* 2.72%, *Relliatina spp* 1.13%).Therefore, depending on the above conclusions, the following recommendations are needed to improve prevalence of parasites for village chickens.

- Strong extension service delivery is needed to health care should be provided.
- Appropriate intervention is needed to control disease to minimize the loss of chicken. Access to veterinary services would play an essential role in this regard.
- In this result, exotic chicken was more infested with parasites than local, but the sample size and numbers of examined parasite were very few so it needs other additional research

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