The Prevalence of Nematode Parasites in Sheep and Goat at Eastern Hararghe Administrative zone, Haramaya Woreda of Six Kebeles and Haramaya University Shoat Farm

Aims: The study aimed to determine the Prevalence of nematode parasites genera by collecting fecal samples from normally grazing individual sheep and goat

Study design: The resident sheep and goats employed for this study was carried out using simple random sampling techniques

Place and Duration of Study: There was one study conducted in East Hararghe Administrative Zone and the current study was to establish the Prevalence of nematodes parasite genera in sheep and goats around Haramaya University goat and sheep farm. Across –sectional study was conducted from Nov.2009 to April 2010 on both local breeds and exotic breeds of sheep and goats.

Methodology: A total of 382 heads of flocks were sampled and fecal materials were collected. Laboratory diagnosis, sedimentation, fecal egg counting was done using Mc. Masters egg counting chamber, fecal culture and Barmann Techniques. The data then analyzed by SPSS application of Microsoft excel spread sheet 2003 version. Descriptive statistics like percentages, standard deviation and Chi-square(X2) tests were conducted.

Results: The overall mean EPF of the two areas (Haramaya University farm and Haramaya Town) were found to be 1512, but heavily egg counts ranging from 600 EPF of feces were mostly indicated in lambs, lactating ewes and Hararghe High Land breeds.

Conclusion: From result obtained , sheep and goats ‘ nematode helminthes parasite were found to be one of the major problems that hampered efficient utilization of production partial of the farm animals and thus requiring attention by all concerned bodies to minimize the problem and design effective control measures.

Despite of the fact that Ethiopia is the 2nd populous in African continent by human populations and rank 1st by livestock populations and 10th in the world **(EARO, 2000) and** from the base of the numerical and economic importance of small ruminants in Ethiopia, productivity is generally low due to scarcity nutrition, poor productive Performance due to disease condition and poor management system **(Brook, 1983, Annon,19940)**.Animal disease are widely distributed and of the major causes of livestock mortality among the serious constrains production of small ruminants Africa Gastro intestinal tract parasitism has high rank and also aggravates disease conditions of animals **(Tekyle, 1991),** major causes of, mortality, ill, thrift, and sub-optimal productivity in all the ecological parts of the country particularly helimenthiosis which are common and wide spread infection of small ruminants and so that ,it considered as one of the major problem in small ruminants production through Causes direct economic losses due to death, reduce feed intake, live weight gains and decrease skins and more render animals more susceptible to other infections**(EARO,2000).**

These infections were either clinical or sub-clinical with later being the most common and lose of the great economic importance and lowered fertility involuntarily culling of the animals, reducing feed intake, cost of treatment, decreasing milk production and mortality in heavily infected animals and this because endo-parsites could be lose between 30%--50% or more their live weight body losses ,because endo-parasites accounting a heavily lose about 700 million ETB**(Fikiru *et.al*,2006,Allonby,and Urquha,1972).**So that the review of literature indicates that there are a number of studies have been undertaken to provide information on the prevalence of a various species of Gastro-intestinal nematode parasites in different agro-ecological zones to minimize this serious production(**Hansen and Perry,1994,Mamo and Gebre,1981,Mechael *et.al*,1985).**

In Ethiopia, parasitological investigations of small ruminants in the humid central high land regions of our country have demonstrated that the most species of nematode associated with parasitic gastro –enteritis in small ruminants are; nematode of the stimuli and for some parasites such as Bonustomum and Strongyloides the infective stages was genera Haemonchus, Trichostrongylus, Oesophagostomum, Nematodirus, Cooperia, Tricuris and Strongyloides are the most parasitic helminthes of economic and zoonotic importance affecting Goats and Sheep in the country(**Allonby,1980,EARO,2002**).

The most amazing is that the immediate transfer of infections from one host to another host does not common **(Craig and Hendrix, 1998).** This basic life cycles also consists of seven stages ,Eggs ,four larvae stages ,L_1 ,L_2, L_3 , and $L_4$and two adult stages that comprising separate males and females, adult females in GIT produce in eggs that are passed out within feces of animals. Then the first stage larvae (L_1) develop within the egg and then hatches in the external environment. The L1 feed on bacteria in the fecal pillet and molts to the second stages larvae (L_2) **Murray *et.al, 1973***).

During which the larvae shed completely cuticles including the lining mouth opening and the excretory pore. Once the molts are over, it starts feeding on the bacteria with the fecal pillet and enters to the second molting periods. The stoma closed the larvae is scaled off within the separate cuticle called ***unsheathed*** third stages larvae which takes 6 to 14 days to reach this stages in most cases. At these stages, the larvae leave in fecal pillet and available on nearby pasture waiting for host (**Urquhart et.al., 1996; Bowman, 1999).**

Although the basic nematodes lifecycles described previously holds true for many nematode species, it is true that other species shows number of variations and complications in their life cycle patterns. Most of these variations are concerned with the infective stages and weather other ,in addition to ,the definitive host may play a role in the life cycle (**Hansen and Perry, 1994).**Thus some nematode species are showing exceptional circumstances that L_3 develops within the protective egg shell and the infections of the host is acquired by the ingestion of L3 within the egg shell or hatched as L_3) and deposited on the pasture**.(Kuaufmann,1994)**.In case of the Trichuris species , the infective larvae develop after being passed in feces within the egg shell and the animal infected by ingesting the infective larvae inside the eggs shell (**Kaufmann,1994).**

Strongyloides species, the eggs passed in feces contain fully develop larvae which have possibly of developing either to free living adult or infective larvae stages ($L_{3)}$ thought host and parasite in the external environment which may infect the host through penetration of the Skin. Sings were seen on their animals. The ways of treatment applied some with that of Haramaya University Flock farm and sometimes, they treat their animals by burning with hot metal plates and make a collar on the neck of their animals. Although no breeding programmed were formulated to decrease infections rate, lambs mortality rates and ewe's comprise due to pregnant stress during dry seasons of pasture shortages and malnutrition. Their bedding system in generally, within insufficient ventilation and the flock reared in semi-intensive farming system with poor managements, poor nutrition, in efficient treatment and un programmed breeding system; because animal separation was absent and they are totally rearing to gather with other animals populations which leads the animals to disease transmissions or high diversification of endo and ecto-parasitic to the flock was studied. In general, in both areas, these residents sheep and goats are employing for this study and sampling was carried out using simple random sampling techniques that suggested by Hansen and Perry, (1994).

II. MATERIALS AND METHODS

Across –sectional study was conducted from Nov.2009 to April 2010 on both local breeds and exotic breeds of sheep and goats that are found in the areas to determine the Prevalence of nematode parasites genera by collecting fecal samples from individual animals that are normally grazing and also associated with the infection of these nematode parasites and the fecal nematodes, eggs, and larvae counting was conducted (Hansen and Perry, 1996, Thomas *et al*., 1996).

2.4. Sample size determination

There was one study conducted in East Hararghe Administrative Zone and the current study was to establish the Prevalence of nematodes parasite genera in sheep and goats around Haramaya University shoat farm and sample size was determined according to **Trust field (1995).**

$$\frac{n = 1.962\ Exp(1 - Exp}{d2}$$

Where Exp=is expected prevalence

n=is sample size

d=absolute precision

1.962=constant value (K).

The expected prevalence of these parasites in respective of the area was based on the previous study conducted by **Sisay, (2007)** with prevalence 92.6%.The sample size required to increase the prevalence would be a total of

382 of sheep and goats at 95% confidence and 5% expected error. Then the total of these animals were sampled randomly and examined for the presence of nematode helimenthes parasites (**Homand and Sewell, 1990).**

2.5. Study Methodology

Fecal materials collection ,during the study periods indicated a total of 382 .heads of flocks were sampled and fecal materials were collected pre-rectus ,species ,based ages ,sex, breeds, and origin of the sampled animal and transported the sampled fecal materials to Haramaya University parasitological laboratory for immediate processing to achieve the goal of the study based on the following facilities for diagnostic methodologies**.**

2.5.1. Parasitological Examination

Laboratory diagnosis, sedimentation, fecal egg counting using Mc. Masters egg counting chamber, fecal culture and Barmann Techniques**.** During these process details of materials required for preparations and procedures for each techniques that provided under annex parts.

Saturated saline floatation Techniques

The logical behind is to concentrate the nematode parasite eggs and other parasites in a given portion of sample materials (**Hendrix, 1998, Bowman, 1999**).General purpose of saturated sodium chlorides solution with specific gravity of 1,204 was used to float the parasitic eggs (**Hendrix, 1998).**

Qualitative Method

Techniques called ***Mc. Masters*** method is commonly employed and requires a special counting chamber. This method is enables us to determine the eggs in the feces which to indicate the level of infective and degree of worm burden per animals sampled (**Hendrix, 1998, Gonzalez, 2002**). (Annex-ii).

Sedimentation Techniques

It is a qualitative techniques method for determining eggs in the feces and the technique is used mostly for nematode eggs floatation, since are slighter than trimatodes eggs ;because these trimatode eggs' do not float well in common salt solution .For instance,(**Soulsby,1982; Perry et.al.,2002)** describe the eggs of fasciolla and paramiphistomum(Annex-v).

Bormann Technique

This technique was applied to isolate and recover larvae of parasitic nematodes from fecal masses and or cultures identify to identify and differentiate the species or generic level as a keys described (Annon1977), (Annex-ii).

Fecal culturing

In the method of incubating the eggs at a room temperature to hatch, so that the larvae hatched can be identified according to the criteria listed as follow:-Take a certain amount of feces in tray, the amount can be determined by the number of eggs per gram of the feces by running quantitative test first by moisten the sample if too dry or add to sterilized with dry sheep faeces or animal charcoal if too wet. Remember the sheep may be feces sterilized using autoclave at $120c^{o}$ for one hour. Under a suitable moisture contents for 14-21 days with a continuous moistening at an interval of three days. The recovery larvae (L_3) were studied and I identified and the criteria used for identification were:- shape of the larvae, head of the larvae ,number of the larvae and of gut cell , presence or absence of retractile bodies, larvae sheath coverage and

length of sheath tail. Then L_3 harvested using Bormann apparatus ii) after 14 days of incubation and were differentiated (**Annon, 1977; Ndamkong, 1987**), (Annex- ii).

2.6 .Data management and Analysis

Study animals were sampled and samples were labeled based on their specie, Age, Sex, Breed and origin, then after transported the sampled materials to laboratory for processing .The result obtained were recorded that which obtained from each study techniques and these data were centered with Microsoft excel speed sheet. The data then analyzed by **SPSS application** of Microsoft excel spread sheet 2003 version .Descriptive statistics like percentages, standard deviation and Chi-square(X^2) tests were conducted.

III. RESULTS AND DISCUSSION

Over all prevalence parasitological analytical data indicated that **85.6%**of **382 total** sheep and goats were positive ,but no single infections were recorded in the areas ;because there were other Helminthes parasites such a two trimatodes and cestodes were found during may study. The study had established on 11 genera of nematode parasites and parasite identification, based on eggs and larval studied and the overall prevalence of nematode parasites on sheep and Goats **(85.6%).**

Table 1.prevalenoce of nematode parasites with the identification genera

HHH: - Hararghe High Lands; SLL:-Somali Low Lands; SA:-South Africa

variables		infection status					
species	Hemoncus	moderate	,mild	382 Heavy	221	Total	X^2	p-value
ovine		71	84	30		185	1.13	0.805
caprine		56	72	14		142		
Total	Strongylus	127	156	382 44	185	48.43 327		
Age< 1yr		16	48	13		77	8.34	0.325
<1-3yrs	Chavertia ovina	50	96	382 12	121	31.68 158		
>3yrs	Dyctayoducalis	26	54	382 12	94	24.61 92		
Total	Trichuris	92	198	382 37	142	37.17 327		
Sex Female	Nematodirus	76	33	382 25	136	35.60 234		
	Cooperia			382	100	26.18		0.348
Male		28	50	15		93		
Total	Mulareis	104	83	382 40	96	25.13 327		0.325
Origin HHL		48	80	20				
SLL		54	96	24		174		
SA		2	3	0		5		0.237
Total		104	179	44		327		
Breeds Local		108	160	107		322		
Exotic		2	5	0		5		0.672
Total		110	165	107		32		

No statistically significant variations (P>0.05) were observed between species, Breeds, Age , sex and Origin

Table 3.Prevalence and Mean Egg Per Gram (EPG) based on variables like species, Breeds, Age, Sex and Origin

Variables		Total animal examined	positive	P(%)	Mean EPG
Species	Caprine	165	142	85.0	1534.78
	Ovine	217	185	85.25	1326.82
	Total	**382**	**327**	85.60	**1512**
Origin	HHL	170	148	87.66	2851.09
	SLL	207	174	84.06	2514.11
	SA	5	5	100.00	40
	Total	**382**	**327**	85.60	**1512**
Breeds	Local	377	322	85.14	1541.38
	Exotic	5	5	100.00	400.00
	Total	**382**	**327**	85.60	**1512**
Age	<1year	93	77	82.79	1332.15
	<1-3years	73	158	91.33	2129.21
	>3years	116	92	79.31	1436.23
	Total	**382**	**327**	85.**60**	**1512**

HHH: - Hararghe High Lands; SLL:-Somali Low Lands; SA:-South Africa

Fecal culture and larval study results

The genera of nematode larvae of sheep and goats identified through fecal culture include:

Hemonchus 30%,Trichostrongylus 27% ,Bunostomum 4%,Chabertia ovina 3%,Dictyaucaulus 1%,Trichuris 2%,Strongyloides2%,Nematodirus 5%,cooperia2%,Oesophagostomum24% and meulleris2%.Parasitological study revealed that of 327 infected sheep and goats ,the majority of animals 316 out of 327(96.64%) were infected by more than one parasites and only 11(3.36%) harbored single or pure infection. However, descriptive statistical analysis indicated that there is no significant difference (P>0.05) based on species, breeds, sex, age and Origin

Table 4.Infection types in relation to species, Ages, Sex Breeds, and Origin

mixed n(%)	single infection n(%)	x^2	P-value	chi-square
Species Caprine	137(86.06	5(3.	1.7475	
ovine	179(85.65)	6(3.		0.475
Total	**316(96.64)**	**11(3**		
BreedLocal	313(85.41)	9(3.	1.2445	
Exotic	3(100)	2(4.(		6.875
Total	316(96.64)	11(3		
Origin HHL	142(84.96)	69((3		
SLL	170(84.66)	4(5.0	2.496	0.869
SA	4(100)	1(2.2		
Total	**316(96.64)**	**11(3.**	1.5475	0.34
Sex Female	227(87.96)	7(4.8		
Male	89(80.17)	4(8.0	3.8743	
Total	**316(96.64)**	**11(3.**		
Age <1yr	75(87.79)	2(5.0	2.344	
1-3years	152(84.06)	6(3.18		0.68
>3years	89(79.31)	3(3.2(		
Total	**316(96.64)**	**11(3.**	0.340	

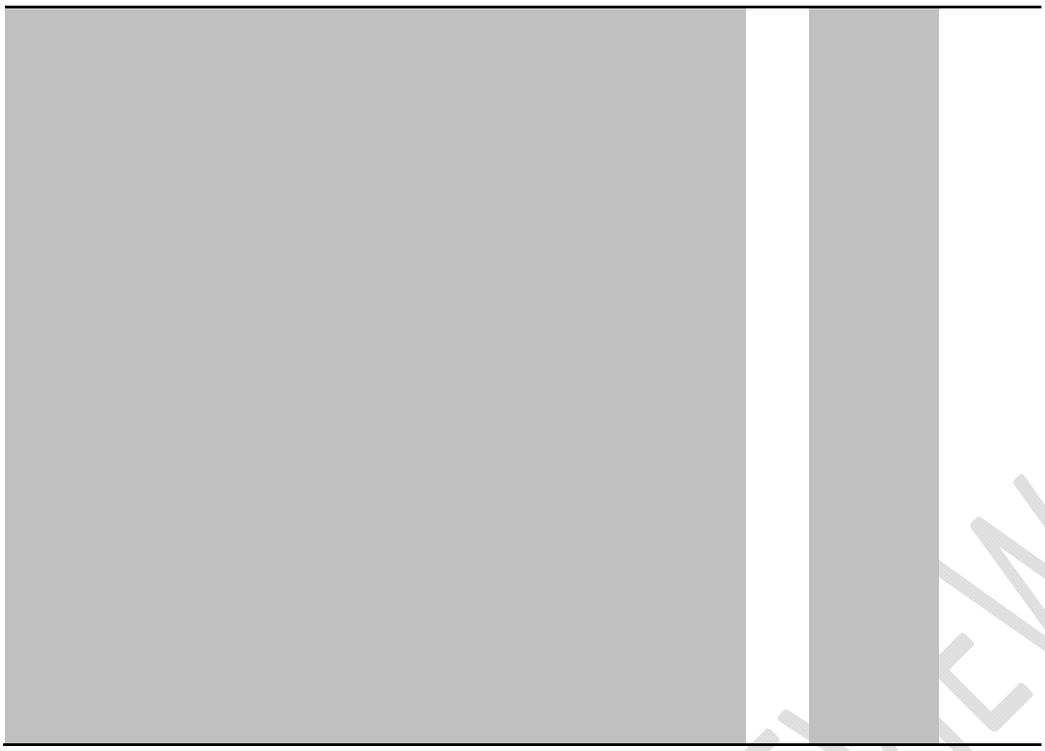

Table 5-Prevaleence rates of nematode parasites in relation to animal species (Caprine and Ovine)

Parasite identified	Caprine n=165	Ovine n=217	X^2	P-value
	tve	tve		
Hemonchus	60.61	55.76	0.903	0.349
Trichstrongylus	53.94	88.94	1.35	0.075
Strongyloides	51.52	46.08	3.057	0.303
Bunostomum	53.33	43.7	1.107	0.257
Chabertia ovine	35.76	28. 57	3.42	0.149
Trichuris	27.27	22.55	2.23	0.338
Dictyocaulus	42.42	33.28	1.11	0.568
Nematodiru	36.97	34.56	3.323	0.070
Cooperia	24.45	76.73	0.23	0.667
Oesphagostomum	29.09	31.34	1.379	0.502
Meulleris	21.82	27.65	2.329	0.392

n=number of animals examined

No statistically significant variation (P>0.05) was observed between both species

Table 6-Prevalence rates of nematode parasites of shoat by breeds

Parasite identified	-Breeds- Local n=377	Exotic n=5	X^2	P-value
	tve	tve		
Hemonchus	57.82	60	0.102	0.562

Trichstrongylus	50.13	80	0.969	0.623	
Strongyloides	48.28	80	1.143	0.358	
Bunostomum	48.54	20	3.717	0.124	
Chabertia ovine	31.56	40	0.627		
Trichuris	74.93	0	1.319	0.576	
Dictayoucaulus	37.14	40	0.285	0.630	
Nematodiru	35.54	40	0.365	0.618	
Cooperia	25.73	80	4.986	0.183	
Oesphagostomum	31.77	0	0.410		
Meulleris	25.19	20	1.357	0.57	

n=number of examined animals

No significant variation(P>0.05) was observed between both Breeds

Table 7.Prevalence rates of nematode parasite of sheep and Goats by Origin

	Parasite identified					
	Origin					
=170	**HHL n=170**	**SLL n=207**	**SA n=5**	**X^2**	**P-value**	
	tve	**tve**	**tve**			
Hemonchus	60.59	59.04	40	1.455	0.483	
Trichstrongylus	50.58	50.	0	0.186	0.344	
Strongyloides	51.76	48.79	80	2.134	0.	
Bunostomum	53.53	43.96	20	5.005	0.182	
Chabertia ovine	31.76	30.92	60	1.909	0.385	
Trichuris .	71	24.64	20	0.058	1.970	
Dictyocaulus	37.65	36	40	0.052	0.974	
Nematodiru	40.00	31.40	60	4.326	0.119	
Cooperia	26.46	25.12	60	4.349	0.361	
Esophagostomum	30.00	31.40	0	3.540	0.472	
Meulleris	28.24	0	40	2.964	0.483	

n=number of animals examined

No Statistically significant difference (P>0.05) was observed by Origin

Table 8: Prevalence rates of nematode parasites genera by Sex

Variable s / Parasite identified	Sex: Female tve	Male n=116 tve	X^2	P-value
Hemonchus	58.27	56.89	0.063	0.822
Trichstrongylus	51.13	49.14	0.127	0.740
Strongyloides	51.13	42.24	2.554	0.120
Bunostomum	47.74	48.28	0.009	0.506
Chabertia ovine	33.46	27.59	1.287	0.283
Trichuris	25.19	23.23	0.159	0.796
Dictyocaulus	36.09	39.66	0.440	0.565
Nematodiru	35.71	35.3	0.005	0.520
Cooperi	25.56	27.59	0.592	0.644
Oesphagostomum	25.76	29.31	0.539	0.661
Meulleri	26.69	21.5	1.134	0.307

n=number of animals examined

No statistically significant difference (P>0.05) was observed in the prevalence rates in relation to se

Table 9:-Prevalence rates of nematode parasites by Age

Variable s / Parasite identified	Age: <1yr n=77 Tve	<1-3yrs n=116 tve	>3yrs n=189 tve	x^2	P-value
Hemonchus	59.74	58.62	56.61	0.260	0.877
Trichstrongylus	51.95	50.86	49.74	0.015	0.944
Strongyloides	53.25	48.28	46.56	0.981	0.612
Bunostomum	53.25	48.28	45.50	1.324	0.016
Chabertia ovine	35.06	32.76	29.63	0.837	0.659
Trichuris	22.08	26.72	24.34	0.553	0.758
Dictyocaulus	38.98	35.34	37.57	0.284	0.868
Nematodiru	40.26	36.21	33.33	0.071	0.019
Cooperia	29.87	25.86	24.87	3.010	0.543
Oesphagostomum	35.06	31.89	27.51	3.140	0.562
Meulleris	25.97	26.72	23.81	0.361	0.835

n=number of animals examined

A statistically significant variations (P<0.05) in the prevalence rates of Bunostomum and Nematodirus was observed between Age groups

RESULTS OF FAECAL EGG COUNTING

Using Mc. Master Egg counting chamber, the FEC/eggs per gram of feces was conducted and based on EPG obtained assuming was made to determine the degree of parasitic infection burden per animal established that 127(33.45%) moderately ,156(40.48%) mi8ld ,and 44(11.52%) heavily infected . respectively. The overall mean EPF of the two areas (Haramaya University farm and Haramaya Town) were found to be **1512,** but heavily egg counts ranging from 600 EPF of feces were mostly indicated in lambs, lactating ewes and Hararghe High Land breeds. The prevalence based on the obtained mean from the populations' data EPG by species, sex, Age Breeds and Origin were conducted and However, there was no significance statistically difference ($P>0.05$) in these animal populations(Table-3).In general ,the categories of the intensity of infection was made based of fecal EPG counts as light (50 800epg), moderate (80-1200 epg) ,and heavily (>1200epg) of feces as described by Jorgen and Brain(1994), and no single infection resulted in any forms during the study and mean that ,there is mixed infections in a grazing ,flocks of small ruminants ,However, during my study in addition to these 11 genera of nematode genera ,other helminthes parasites (Trimatode and Cestodes) were obtained within the laboratory diagnosis ,even within high prevalence than these nematodes genera.

IV. DISCUSSIONS

The study was conducted on11 genera of nematode parasites of small ruminants and to document the nematode parasites in the areas. Thus, to carry out this tucarpo logical examinations employed for identification and quantifications of eggs by saline floatation and Mc. Master Techniques, which revealed that the existence of the parasitoid with the overall prevalence of 85.60% at Haramaya town and Haramaya University farm. This finding revealed high prevalence than the reports of Tekyle (1991) of 80.75% prevalence in arid and semi- arid zones but comparatively this study revealed lower prevalence than most authors reports conducted in different parts of the country .Gebreyesus (1985) reported prevalence of 91% in Gonder ,Amenu (2005) reported prevalence of 96.5% at a central high land. Tesfalem (1989) report 92%prevalence in Bale. Bayu (1992) reported 90% in Buno province of Ilubabor, Genene (1994) reported 92% in Kombolcha, and Dereje (1992) reported 91% prevalence inWallayita Soddo of southern omo. This difference in prevalence in different ecological regions could be explained by the existence of favorable climate condition that support the prolonged survival of infective nematode larvae (L_3) on pasture,(Ndamukong,1987;Laurent ***et al***.,2007) found that months with a total rain fall not less than 51mm,mean minimum and maximum temperature not a greater potential to support prolonged survival of infective nematode larvae (l_3) on pasture with subsequent transmissions to animals. Additionally, factors influencing prevalence including: breed difference (hosts), management, temperature, soil types /vegetation, nutrition, and length of the dry period can be indicated.

In addition to direct coproscopic examinations carried out, fecal masses were cultured or incubated at a room temperature and at optimum moisture for 14-24 days for further accurate differentiations of each genera level of nematode prevalence for those flocks having means epg feces greater than 600 .Based on the fecal culture :11 genera of nematode parasites genera were identified including Hemonchus 30%,Trichostrongylus 27% ,Bunostomum 4%,Chabertia ovine 3%,Dictyaucaulus 1%,Trichuris 2%,Strongyloides2%,Nematodirus 5%,cooperia2%,Oesophagostomum24% and meulleris2%.Parasitological study revealed that of 327 infected sheep and goats ,the majority of animals 316 out of 327(96.64%) were infected by more than one parasites and only 11(3.36%) harbored single or pure infection. However, descriptive statistical analysis indicated that there is no significant difference ($P>0.05$) based on species, breeds, sex, age, and origin.

The most abundantly available pathogen being Hemonchus followed by Trichostrongylus and Oesophagostomum respectively, whereas the rest were contributed less.This current work is contrary to the findings reported by the following Author: Getachew (1998), Gebrekiros(1990) and Bayu(1992) where they identified Trichostrongylus to be the most predominant parasites isolated from the larvae culture with slight variations in abundance amongst the report of the rest authors.

Parasitic variation in dominance could be associated to different in study method or techniques used .However, this study is consistent with the finding reported by Sisay (2007), were Hemonchus, and was, dominants. Hamonchus was observed to be the most prevalent pathogenic internal parasite of GIT in this study as illustrated elsewhere and this could be associated partly with breed susceptibility ,.biological plasticity ,and this environmental adaptability (Sisay,2007).Although this report agreed with findings of Basier and Dunsumore(1993),where they correlated the development of Hamonchus infective larvae the prevailing weather conditions ,in which they reported higher L3 recovery with increasing environmental moisture and this is the most pathogenic and economically important pathogens that causing clinical anemia, Hypoproteinamia, depression ,circulatory collapse with eventual death (Sisay,2007).

During study periods, with few exceptions, the study animals showing mono parasitism 11(3.36%), major of the studied animals 316(96.64%) exhibited poly parasitic infection. This finding also consistent with finding reported by Yoseph (1993), Genene (1994), Getachew (1998), where the reported the higher existence of poly parasitism in both sheep and goats in different regions of the country. In sheep, mixed infection was common as a result of deep grazing nature and sub-optimal nutrition in the study location and this implying the weak status of animal health services.

In general, from the presently coprlogical examination conducted the following sheep and goats, internal parasite species were identified with their decrease order of prevalence respectively:-Hamonchua 57.85%, Trichuris 50.52%, Strongyloides 48.43% ,Bunostomum 47.91%,Dictayucaulus 37.12% ,Nematodirus 35.60% ,Chabertia ovina 31.68% ,Oesphagostomum 30.41% ,Cooperia 26.18% ,Meullaris 25.11% this species specification prevalence varied among authors findings at different times and locations. Donald(1999) reported the following species specific on sheep in eastern and southern semi-arid zones of Ethiopia indicate in Trichostrongylus 49.6% ,Hamonchus 98.8% Bunostomum 42.4% , Strongyloides 44% , Oesophagostomum 97% and Trichuris 67.6%.

The study conducted by Dereje(1992) prevalence of some genera of sheep nematodes helminthes ;Trichostrongylus 10%,Hamonchus 80% ,Oesophagostomum 90%, Trichuris 50% ,Bunostomum 10% ,this variation could be associated with one or more reasons given below. This number of eggs per gram of feces , the number of adults parasites in the hosts ,seasons of study , age and immunity of the animals (host) species of parasites , stages of infection, parturition , breed , and nutrition Donald(1999).Similar findings were reported by Sisay (2007) and where this could be related to ecological sustainability and retirements for both the parasites and intermediate host(snails).

The present study shows no statistically significant difference ($P>0.05$) between age groups, species, sex breeds and Origin; except in the prevalence rates on the bases of a certain parasites genera. In contrast, according to (Asefa and Sisay, 1998), they have been reported that gastrointestinal parasites affect both sexes equally since they have equal exposure and they are originated from the same similar ecological areas (Armour,1980).No statistically significant association was observed in the prevalence of GIT helminthes between different age groups with few exception of parasitic genera (Table-9).This is due to equal exposure of all ages groups and they are from exposure of age groups and they are from same ecological areas (Armour,1980).In the same manner ,species breeds ,sexes and Origin of study animals had no statistically significance ($P>0.05$), except few genera having significant variations ($P<0.05$).This might have been emanated from reasons given above for

species , age groups, sexes , breeds ,and Origin with few exceptions (P<0.05).In additions ,the study methodology could be one major sources of difference. For each nematode parasites genera identified in this study ,the presence or absence of association with species ,breeds ,age, sexes, and Origin were analyzed ;but no statistically significant value obtained (P>0.05) with few exception on the basis of species ,breeds ,age, and origin which could be related to factors mentioned above and it could be due to difference in study methodology and degree of precision on performance.

The intensity level obtained in this current work revealed the existence of total mean epg of 1512 having an interpretation of having position .An attempt was also made to assess the degree of parasitic intensity level (infestation burden) is that 127(33.45%),156(40.48%) ,and 44(11.52%) , were infected moderately ,mild ,and heavy respectively. This finding different from the report (Tekyle, 1991) in which (2211%) light, (28.32%) moderate, and 16.17%) heavy which may be due to study methods and categorization systems used. In general, the mean epg was found to be heavy for lambs, females and HHL sheep breeds, (1332.15) and 91864.11), species, caprine (1534.28), and ovine (1826.28), respectively. Low level of intensity was found in exotic breeds 9400epg), which could be related to management , nutrition , more intensive management compared to the rest ,and breeds resistance relatively to local breeds.

The study objectively assessed and identified 11 genera of GIT parasites, with highest overall prevalence. This high prevalence indicates the importance of the problem in the study farm hampering productivity and the health of animal. The majority of the animals were mildly infected followed by moderate infection with least heavy infection. From result obtained , sheep and goats ‘ nematode helminthes parasite were found to be one of the major problems that hampered efficient utilization of production partial of the farm animals and thus requiring attention by all concerned bodies to minimize the problem and design effective control measures**.**

V. RECOMMENDATIONS

Based on the above conclusions, the following recommendations are forwarded. The strategic deworming before and after rain seasons and ewes prior to lambing (2-4weeks) and (kidding). A sick animal management systems housing, watering, and feeding lands control lambing and kidding times to be improved as rotational grazing interval and avoid communal grazing with other species of animal populations to avoid cross parasitic contamination. Quarantine newly introduced flocks for at least 30 days and deworm prior to mingling to the previous flocks. Disease resistant breeds should rear to the most prevalent and pathogenic parasite (Hamonchus and other parasites) were identified in the areas.

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