www.ThePharmaJournal.com

The Pharma Innovation

ISSN (E): 2277-7695
ISSN (P): 2349-8242
NAAS Rating: 5.23
TPI 2022; SP-11(9): 20-22

www.thepharmajournal.com
Received: 01-07-2022
Accepted: 04-08-2022

Dr. Chetankumar C
Scientist (Contract), Livestock Research Station, Sri Venkateswara Veterinary University, Siddarampuram, Anantapuramu, Andhra Pradesh, India

Dr. Srinivasa Naik H
Scientist & Head, Livestock Research Station, Sri Venkateswara Veterinary University, Siddarampuram (V), Anantapuramu, Andhra Pradesh, India

Dr. B Raghukarn Naidu
Veterinary Assistant Surgeon (Contract) Livestock Research Station, Sri Venkateswara Veterinary University, Siddarampuram, Anantapuramu, Andhra Pradesh, India

Corresponding Author
Dr. Chetankumar C
Scientist (Contract), Livestock Research Station, Sri Venkateswara Veterinary University, Siddarampuram, Anantapuramu, Andhra Pradesh, India

Prevalence of gastro intestinal parasites of sheep in suburban part of Anantapuramu district of Andhra Pradesh

Dr. Chetankumar C, Dr. Srinivasa Naik H and Dr. B Raghukarn Naidu

Abstract
A study was carried out to know the presence of various gastro intestinal parasites of sheep in Anantapuramu region of Andhra Pradesh. A total of 520 faecal samples were collected, processed and examined by sedimentation technique during the study period and 71(13.65%) samples were found positive. Gastro Intestinal parasites such as *Haemonchus, Strongylus, Trichuris* were identified, highest prevalence was observed with *Haemonchus* (53.52%) followed by mixed infections (26.76%), strongyles (9.85%) and *Trichuris* (9.85%). Significantly high prevalence of gastro intestinal parasites was found during monsoon (46.47%) followed by moderate in winter (36.61%) and least in summer (16.90%) in all ages of sheep which were screed.

Keywords: Gastro intestinal parasites, sheep, suburban part

Introduction
Gastro intestinal parasitism plays an important role in affecting the productivity of small ruminants worldwide and are much of economic significance because sheep plays an important role in national economy and rural socio economic conditions of small and marginal farmers. Commonly occurring gastro intestinal parasitic diseases in sheep are haemonchosis, strongylosis and trichostrongylosis among these haemonchosis is the most important, and caused by *Haemonchus contortus* (red stomach worm or wire worm) (Urquhart *et al*., 1996) [26]. *Haemonchus* are blood feeders and can cause severe anemia, hypoproteinemia, and resultant edema. This edema is characteristically present in the intermandibular space, resulting in a physical resemblance to a bottle ("bottle jaw"). (Urquhart *et al*., 1996) [26] *H. contortus* probably causes more losses than any other species of nematode in ruminants (Mirtodi *et al*., 2011) [27] and identified as the most important wire worms (Khan *et al* 2010, Tariq *et al* 2010, Osakwe *et al* 2007) [8, 24, 13]. There is a need for proper understanding of the epidemiology of parasitic diseases for the rational design of cost effective strategies to control gastro intestinal parasites in small ruminants for better productivity and growth. There is no study on small ruminants gastro intestinal parasitism in Anantapuramu region of Andhra Pradesh. Hence the present study is undertaken to assess the parasitic infection in small ruminants.

Materials and Methods
Study area and study period: Faecal samples were collected in and around shepherd flocks of suburban area of Anantapuramu to know the prevalence of gastro intestinal parasites in sheep during study period of January 2020-December 21

Sample size: A total of 520 faecal samples were examined for the presence of eggs of internal parasites from different aged groups of selected sheep population. Faecal samples were collected directly from the rectum of each animal. Gross examination was carried out for colour, consistency and presence of any adult worms. Faecal samples were processed by sedimentation technique and examined under low power objective (10 X). The ova of internal parasites were identified based on their morphological features.

Results and Discussions
A total of 520 faecal samples were collected in and around shepherd flocks of suburban part of Anantapuramu to know the prevalence of gastro intestinal parasites in sheep during study

period of 2020-21 out of which 71 (13.65%) samples were found positive (Table – 1). Highly significant difference in the prevalence of gastro intestinal parasitism was observed in different age groups of sheep (Gulland *et al*., 1992; Tasawar *et al*., 2010; Biu *et al*., 2009) [6, 25, 2], (Table-2). The variation in prevalence of parasitic infection in different age groups depends upon difference in agro climatic condition and susceptibility of host (Radostits *et al.*, 2000) [5]. Gastro intestinal parasites such as *Haemonchus, strongyles, Trichuris* and mixed infection were identified, in which the highest prevalence was observed with *Haemonchus* (53.52%), followed by mixed infections (26.76%), strongyles (9.85%) and *Trichuris* (9.85%) in all groups of studied animals (Table –3). This high prevalence of *Haemonchus* was attributed to its high fecundity, leads to rapid contamination of pastures and there by ingestion of larva (Roberts *et al*., 1982) [18]. Higher incidence of haemonchosis was observed in external grazing animals on pastures (Riche *et al.*, 1973) [17]. Prevalence of gastro intestinal parasitism significantly higher during monsoon (46.47%) followed by winter (36.61%) and least in summer (16.90%) in all ages of sheep (Nwosu *et al*., 2007; Regassa *et al*., 2006; Sutar *et al*., 2010) [12, 16, 23]. Climatic conditions in monsoon might be favorable for the development, survival and translocation of pre parasitic stages, so there is a build-up of adult worm populations in grazing animals in monsoon, there after sustained during winter and declined during dry season (Mir *et al*., 2012) [11].

Table 1: Animal population studied

S. No	Category of sheep	Number of animals
1.	Ewe	300
2.	Ram	40
3.	Young ones	110
4.	Lambs	70
	Total:	520

Table 2: Overall prevalence of gastro intestinal parasites in sheep

Category of animal	Total number of samples examined	Number of positive samples	Positive sample percentage (%)
Ewe	300	36	12%
Ram	40	05	12.5%
Young ones	110	18	16.36%
Lambs	70	12	17.14%
Total	520	71	13.65%

Table 3: Species wise prevalence of gastro intestinal parasites in sheep

Category of animal	Total No. of samples examined	Total Positive samples	*Haemonchus*		*Trichuris*		Strongyles		Mixed infection	
			No. of positive samples	Positive sample %	No. of positive samples	Positive sample %	No. of positive samples	Positive sample %	No. of positive samples	Positive sample %
Ewes	300	12%	15	41.66%	06	16.66%	05	13.88%	10	27.7%
Rams	40	12.5%	03	60%	---	---	---	---	02	40%
Young ones	110	16.36%	11	61.11%	01	5.55%	02	11.11%	04	22.22%
Lambs	70	17.14%	09	75%	---	---	---	---	03	25%
Total:	520	13.65%	38	53.52%	07	9.85%	07	9.85%	19	26.76%

Table 4: Seasonal wise prevalence of gastro intestinal parasites in sheep

Season			
	Summer	Monsoon	Winter
No. of faecal samples examined	105	197	218
No. of samples found positive	12	33	26
Positive sample %	16.90%	46.47%	36.61%

Conclusion

Present study concludes that sub urban part of Anantapuramu is highly endemic for various important gastro intestinal parasites especially *Haemonchus* in sheep. More prevalence found in rainy season, followed by winter and summer seasons. Frequent screening of fecal samples gives an idea about the prevalence of various worm infections which in turn helps in the formulation of various preventive strategies in the region.

References

1. Barger IA. The role of epidemiological knowledge and grazing management for helminthes control in small ruminants. Int. J parasitology. 1999 Jan 1;29(1):41-47.
2. Biu AA, Maimunatu, Salamatu AF, Agbadu ET. A faecal survey of ruminants on the University of Maiduguri Research Farm. Int. J Biomed. Sci & Health 2009;5(4):175-179.
3. Bizimenyers ES, Meyer S, Naidoo V, Eloff JN, Swan GE. Efficacy of *Peltophorum africanum* Sond (Fabacae) extracts on *Haemonchus contortus* and *Trichostrongylus colubrifromis* in sheep. J Anim. Vet Adv. 2008 Apr 1;7(4):364-371.
4. Chijims SN, Emechelu CO. Seasonal changes in pasture populations of infective larvae of gastrointestinal nematodes of cattle in Eastern Nigeria. Res. Vet. Sci. 1984 Sep 1;37(2):144-147.
5. Durrani MZ, Hayat CS. Gastrointestinal parasitism in sheep and goats in Lyallpur (Faisalabad) district. Proc. 17th Pak. Sci. Conf., Lyallpur (Faisalabad); c1964.
6. Gulland FMD, Fox M. Epidemiology of nematode infections of soay sheep (*Ovis aries* L) on StKilda Parasitology. 1992;105(3):481-482.
7. Jithendran KP. Epidemiology of gastrointestinal nematodes in migratory sheep and goats in North-West Humid Himalayan region. Indian J Anim. Sci. 1998;68(9):894-896.
8. Khan MN, Sajid MS, Khan MK, Iqbal Z, Hussain A. Gastrointestinal helminthiasis prevalence and associated determinants in domestic ruminants of district Toba Tek Singh, Punjab, Pakistan, Parasitol. Res. 2010;107(4):236-246.
9. Kumar R, Yadav CL. Prevalence of Fenbendazole resistance in ovine nematodes in North-West India. Trop, Anim Health Prod. 1994 Dec;26(4):530-234.
10. Marquardt, Demaree. Parasitology, 1st Ed Macmillan publishing company, New York; c1985. p. 377-379.
11. Mir MR, Chishti MZ, Dar SA, Rashid M. Bionomis of

helminth parasites in goats of subtropical Jammu area of J&K. Agric. Biot. J. N. Am. 2012;4(3):316-319.
12. Nwosu CO, Madu PP, Richards WS. Prevalence and seasonal changes in the population of gastrointestinal nematodes of small ruminants in the semi-arid zone of north-eastern Nigeria. Vet. Parasitol. 2007 Mar 15;144(1-2):118-124.
13. Osakwe II, Anyigor SI. Prevalence of gastrointestinal helminthes in West African Dwarf (WAD) goats in an agrarian agro-ecosystem. Anim. Res. Int. 2007;4(3):728-732.
14. Pathak AK, Pal S. Seasonal prevalence of gastrointestinal parasites in goats from Durg district of Chhattisgarh. Vet. World. 2008 May 1;1(5):136-137.
15. Radostits OM, Gay GC, Blood DC, Hinchkiliff KW. Veterinary medicine 9th ed. EIBS and Bailliere Tindal; c2000.
16. Regassa F, Sori T, Dhurguma R, Kiros Y. Epidemiology of Gastrointestinal Parasites of Ruminants in Western Oromia, Ethiopla. Int. J Appl. Res. Vet. Med. 2006;4(1):51-57.
17. Riche PD, Efstathiou GC, Alfan Y, Campbell JB. A helminth survey of sheep and goats in Cyprus. Helmintho. 1973;43(3):251-262.
18. Roberts JL, Swan RA. Quantitative studies of ovine haemonchosis. @. Relationship between total worm counts of *Haemonchus contortus*, haemoglobin values and bodyweight. Vet. Parasitol. 1982;9:201-209
19. Skyes AR. Parasitism and production in farm animals. Anim. Prod. 1994 Oct;59(2):155-172.
20. Sood ML. *Haemonchus* in India. Vet. Parasitol. Dec;83(3):639-650.
21. Soulsby EJL. helminthes, Arthopords and Protozos of Domesticated Animals. 7thed. The English Book Society and Bailliere, Tindall, London; c1982. p. 767.
22. Suh MD, Kim CS, Jung MK. Epidemiological study on the infection rate of internal parasites of sheep at an alpine breeding station. Res. Reports of the Rural Dev., Korea. 1980;22:38-146.
23. Sutar AU, Kengar SB, Patil SS, Khan MR. Prevalence of Gastrointestinal Parasites in Goats of Ahmednagar district of Maharashtra. Vet. World. 2010;3(10):456-457.
24. Tariq KA, Chishti MZ, Ahmad F. Gastro-intestinal nematode infections in goats relative to season, host sex and age from the Kashmir valley, India. J Helminthol. 2010 Mar;84(1):93-97.
25. Tasawar Z, Ahmad S, Lashari MH, Hayat CS. Prevalence of *Haemonchus contortus* in sheep at Research Centre for conservation of Sahiwal cattle (RCCSC) Jehanirabad district Khanewal, Punjab, Pakistan. Pak. J Zoo. 2010;42(6):735-739.
26. Urquhart GM, Armur J, Duncan JL, Dunn AM, Jennings FW. Veterinary parasitology, 2nd Ed. Scotlad, balack; c1996.
27. Vassura M, Di Lena P, Margara L, Mirto M, Aloisio G, Fariselli P, Casadio R. Blurring contact maps of thousands of proteins: What we can learn by reconstructing 3D structure. Bio Data mining. 2011 Dec;4(1):1-5.