

Prevalence of Common Parasites in Sheep of Kashmir Valley

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INTRODUCTION

Livestock is an important and an integral component of agriculture in India and contributes immensely to the rural economy of the country. The contribution of agriculture and livestock to the total GDP has increased from 5.04% in 2007-08 to 18.52% in 2013-14. Rearing of sheep and goat in advanced countries like USA, Australia and New Zealand is commercialized and is being run on large scale by private entrepreneurs. In India, however the rearing of Sheep and goats is a traditional vocation of most of the nomadic tribes in the states of J & K, H.P., U.P., Rajasthan, Gujarat, Maharashtra, Karnataka, A.P. etc. Sheep and goat rearing provides livelihood to the large proportion of small and marginal farmers and landless labourers. Livestock sector in J&K is emerging as important component for growth and economic development. Estimated livestock Population of the state, as per the latest available integrated sample survey (2011-12), is 160.407 lac. comprising of 39.204 lac sheep, and, 18.136 lac goats, .The estimated meat production registered a growth from 308.986 lac Kgs to 322.781 lac Kgs over the previous year resulting into 4.47% growth. The annual losses in livestock sector is estimated to be Rs 43,200 crore of which 32% is valued at Rs 13,830 crore is on account of disease. Parasitic diseases of sheep is grave cause of economic loss to sheep – raising industry all over the world, not only impose direct impact but renders the animals more liable to other diseases ,thereby lowering the vitality ,likewise in valley, the parasitic infestation is the major constraint in survival and productivity of sheep/goat – raising industry and have got unique importance as they cause high morbidity and huge economic losses in the form of low wool, meat and milk production, retarded growth, morbidity, mortalities and reduced FCR, inefficiency of production and by way of cost incurred in treatment and control of diseases.

The prevalence of common parasites in Kashmir region that is tremendously affecting the progress of sheep industry have been studied at DIL Nowhera Srinagar by an investigation carried out from 2013-2014 to 2014-2015 through routine parasitological examinations of 10328 fecal samples randomly collected/received from organized (Farms) and unorganized sectors of valley, besides samples were collected during outbreaks in private flocks. The aim to determine the prevalence of helminthes in valley is to minimize the economic loss of sheep rearing community by effective strategic control of parasitic infestation in sheep husbandry.

Brief description of common parasites: The brief description regarding the common parasites revealed during study and their prevalence in sheep is depicted as under.

Haemonchus controtus: Gastrointestinal nematodes rules highest on global index with *Haemonchus controtus* on top. This parasite is considered to be the most pathogenic nematode of livestock in recent years as it is a blood sucking parasite that pierces the lining of abomasums causing blood plasma and protein loss to the sheep, bottle jaw-accumulation of fluid under the jaw. The effective control of this parasitism has been hindered due to lack of epidemiological data, limited integration of geographical and agroclimatic conditions, under managerial practices and emergence of antihelminthic resistant strains of parasites in Kashmir valley. The observed prevalence of **Haemonchus controtus** during 2013-2014 and 2014-2015 was 15.13% and 11.04 %, respectively.

Moniezia Spp: The Segments of these worms most commonly seen in the sheep faeces. When lambs are heavily infested the mechanical intestinal obstruction caused by the presence of worms and the irritation set up interferes seriously with the health and growth of animals of the animals. It is seen that the lamb growth rate may be affected when large number of tapeworms are present. The prevalence for **Moniezia Spp** was 13.69% and

0.40% during 2013-14 and 2014-15, respectively.

Coccidia- Eimeria: Coccidian is a single cell protozoa that damages the lining of the small intestine. Coccidiosis is very common in sheep especially young growing lambs. It causes unthriftiness, tucked-up appearance diarrhea, dehydration, fever, weight loss, loss of appetite, anaemia and death. The lambs become very weak and may eventually die from exhaustion. Mortality may commence with few lambs being found dead and then gradually increase to 20to 30% of flock or more. 7.07% and 10.12% prevalence for *Eimeria* was observed during 2013-14 and 2014-15, respectively.

Strongyloides: Infestation is usually by penetration of larvae via skin. Damage to skin between and around feet produce by skin penetrating larvae, resembles the early stages of foot rot and aid the penetration of casual agent of foot rot. Migration of larvae through lungs may cause pulmonary hemorrhage manifested clinically by cough. Intestinal infection cause catarrhal enteritis resulting diarrhea in young animals. The prevalence for *Strongyloides* was 10.68% and 14.61 % during 2013-14 and 2014-15, respectively.

Fasciola Fasciolosis, the disease, that had caused much havoc in past, now has been drastically reduced by the effective strategic dosing regimen by the field authorities with advanced technical inputs from time to time by the department. However, deaths due to acute fasciolosis have been reported from some areas of valley. The prevalence for *Strongyloides* was 0.02 % and 0.01 % during 2013-14 and 2014-15, respectively.

Trichostrongylus: Infestation is mainly a problem in lambs, in which it causes villous atrophy and loss of plasma into intestine due to increased vascular permeability leads to black scours, anaemia stunting growth in older sheep, infestation remains at low levels and is rarely serious. The prevalence for *Strongyloides* was 0.14 % and 0.25 % during 2013-14 and 2014-15, respectively.

Nematodirus: Infestation causes serious parasitic gastroenteritis resulted of inappetance, acute diarrhoea, weight loss in a group of healthy spring lambs. The infestation in young lambs is sudden, hyper acute and rapidly fatal if untreated. Prevalence of 5.23 % and 0.33 % for Trichuris during 2013-14 and 2014-15, respectively observed.

Trichuris: The species usually considered to be innocuous but if present in large number

may cause sufficient irritation which result in bloody diarrhea, anaemia, weakness, and abdominal pain. The prevalence of common parasites in sheep from 2013-14 and 2014-15 is presented in Tables 1 and 2, respectively. Prevalence of 0.07% and 0.027 % for Trichuris during 2013-14 and 2014-15, respectively observed.

Table 1: Prevalence of common parasites in sheep 2013-2014

Season	Month	Samples examined	Samples +ive	Number of Animals infested							
				Haemonchus	Strongyleid	Eimeria	Moneizia	Nematodirus	Trichostrongylus	Trichuris	Fasciola
Spring	March	258	179	20	52	--	08	--	--	--	--
	April	350	226	---	42	50	174	--	--	--	01
	May	484	279	201	23	54	----	--	--	14	--
Summer	June	375	160	----	19	34	72	05	--	--	--
	July	243	91	42	---	20	12	09	--	--	---
	August	237	84	25	12	29	---	--	--	--	--
Autumn	September	363	275	103	10	19	----	75	--	07	--
	October	207	118	64	25	----	29	05	03	--	--
	November	371	292	----	63	40	95	38	26	--	--
Winter	December	228	154	----	26	15	70	24	--	--	--
	January	271	170	103	45	----	----	17	01	05	--
	February	301	145	----	77	----	45	20	25	--	--
Total NO.		3688	2173	558	394	261	505	193	55	26	01
% infestation			58.92%	15.13%	10.68%	7.07%	13.69%	5.23%	0.14%	0.07%	0.02%

Table 2: Prevalence of common helminthes of sheep 2014-2015

Season	Month	NO.of samples tested	No.of animal+ive	Number of Animals infested							
				Haemonchus	Strongyle	Eimeria	Moneizia	Nematodirus	Trichostrongylus	Trichuris	Fasciola
Spring	March	299	98	01	75	03	13	09	--	--	--
	April	260	71	06	42	08	--	07	17	--	--
	May	72	49	24	17	21	13	03	--	--	--
Summer	June	188	128	24	55	77	09	29	05	--	--
	July	138	58	08	02	28	19	03	--	--	--
	August	45	18	10	14	01	02	--	--	--	--
Autumn	September	62	20	10	21	--	--	01	--	--	--
	October	70	28	02	13	--	--	--	--	--	--
	November	253	109	21	17	--	12	06	14	01	03
Winter	December	322	119	70	11	32	06	04	06	04	--
	January	106	28	19	03	02	--	--	04	--	--
	February	32	29	11	--	14	--	--	02	--	--
Total		1847	755	204	270	187	74	62	48	05	03
% tage			40.87%	11.04%	14.61%	10.12%	0.40%	0.33%	0.25%	0.027%	0.01%