

Incidence of Gastrointestinal Helminths in Spiti Horses of Himachal Pradesh

R.Katoch, S. Katoch¹, R.K. Agnihotri, K. B Sharma² and Ajay Katoch¹

Department of Veterinary Parasitology, College of Veterinary & Animal Sciences, CSKHPKV, Palampur (H.P) 176062

Abstract

Faecal samples from sixty Spiti horses from three different regions viz. Pin Valley, Shimla and Rampur of Himachal Pradesh were collected per rectum and subjected to qualitative and quantitative examination. It revealed an overall incidence of Strongyle (75%), lungworms (18.37%), *Parascaris* (10.2%), *Habronema* (3.33%) and *Strongyloides* (1.67%). The average Strongyle egg per gram of faeces was observed to be 395 ± 47.15 . The present study suggest heavy infection of gastrointestinal helminths in equines due to open grazing system as well as not following strategic deworming schedule.

Introduction

Equine population as a whole in India is over 2 million which account for 40 million horse power units for different purpose in our country. Spiti breed, one of the six recognized breeds of horses in India, has its true breeding tract confined to Pin Valley region in Lahaul & Spiti district of Himachal Pradesh. These horses thrive well in Himalayas and are mostly maintained on outdoor grazing throughout their life, thus they suffer with gastrointestinal helminths which not only cause direct damage but also lowers the immunity and predisposes them to wide array of diseases. There are few reports on parasitic disease in equines (Sengupta and Yadav, 1997; Kotwal *et al.* 2000). So, the present study was carried out in 60 Spiti horses of three different regions of the state.

Materials and Methods

In this study equines of Pin valley, Shimla and Rampur area were used. These animals were maintained on outdoor grazing throughout their

life. No deworming was practiced during or prior to start of this study. The faecal samples were collected per rectum and subjected to qualitative and quantitative faecal examination using saturated salt solution and modified Mc Master technique, respectively.

Results and Discussion

The result of qualitative and quantitative faecal examination are summarized in Table 1. The overall incidence of strongyle positive horses was observed to be 75%. However Wadhwa *et al.* (1993) reported 70.14% strongylosis in Palampur area whereas Katoch *et al.* (1999a) observed 100% incidence of strongyles in Chountra region of Mandi district of Himachal Pradesh. Sengupta and Yadav (1997) also recorded 64.52% strongylosis in pony and mares of Tarai region of Uttar Pradesh. Similarly heavy infection of 56.8 - 71.3% *Strongylus spp.* in equines of Haryana has been reported (Chaudhri *et al.*, 1985). In contrary to the present studies Damodaran *et al.* (1978) observed low infection of 8.0% in equines of Tamil Nadu. Strongyle worms cause haemorrhagic ulcers at the site of attachment and periodically move to new site, leading to anemia. The larval stages of these worms can cause severe lesions in arterial system which may lead to lameness, diarrhoeic syndrome, chronic recurrent colic, haemorrhages in liver, pancreas etc. (Duncan & Dargie, 1995; Soulsby, 1982). The overall incidence of ascarid positive cases was observed to be 10.20% whereas Sengupta and Yadav (1997) observed 14.54% ponies and mares positive for *Parascaris equorum* from Tarai region. Chaudhari *et al.*

1 Deptt. of Animal Breeding and Genetics, 2 Deptt. of Veterinary Physiology

Katoch and others

Table 1:

Incidence of Gastrointestinal helminths in Spiti horses of Pin Valley, Shimla and Rampur area of Himachal Pradesh.

Location and number of	Strongyle (% positive) Mean EPG \pm S.E. (Range)	<i>Parascaris</i> (% positive)	Lungworms (% positive)	<i>Habronema</i> (% positive)	<i>Strongyloides</i> (% positive)
Pin Valley (20)	60.0 340.0 \pm 92.17 (0 - 1200)	20.0	10.0	Nil	5.0
Shimla (15)	80.0 333.33 \pm 67.37 (0 - 900)	6.67	33.33	Nil	Nil
Rampur (25)	84.0 476.01 \pm 75.33 (0 - 1200)	Nil	8.0	8.0	Nil
Total (60)	75.0 395.0 \pm 47.15 (0 - 1200)	10.20	18.37	3.33	1.67

(1995) observed *Parascaris equorum* infection to be in the range of 0.6 - 10.2 % in different months of the year. The infectivity in equines of Palampur have been reported to be in range of 4.47- 21.62%. (Wadhwa *et al.*, 1993; Katoch *et al.*, 1999a). Heavy infection of this worm leads to catarrhal enteritis and flatulence.

In the present study parasitic bronchitis due to *Dictyocaulus arnfieldi* has been observed 18.37%. The incidence of this parasite was observed to be 5.4% in equines of Palampur region (Katoch *et al.*, 1999b). Sengupta and Yadav (1997) has recorded incidence of 1.61% in ponies of Tarai region. Damodaran *et al.* (1978) reported bronchitis in equines of South India due to this parasite. Actually cases of clinical conditions in horses are seen during prepatent phase of parasite when larva / larvated eggs will not be present in faeces and animals negative for ova of larvae in faeces may possess lungworm infection with a febrile syndrome. Round (1976) recommended treatment of lungworm infection to all horses with a febrile syndrome. In this region chances of infection to horses is more as donkeys

and horses share common pasture and donkeys are assumed to be natural host for this parasite (Soulsby, 1982).

In the present study 3.33% infection of Habronemiasis is observed whereas Kulkarni *et al.* (1989) recorded heavy incidence of this parasite in equines of South India. Katoch *et al.* (1999a) observed 5.4% incidence of this parasite in equines of Palampur region. This parasite does not cause marked clinical symptoms except interference with closing of sphincter and digestive disturbances but infection in host remains active source for flies leading to "cutaneous habronemiasis".

The overall incidence of *Strongyloides* in present study was observed to be 1.67%. *Strongyloides* in foals produce diarrhoea of acute type (Enigk *et al.*, 1974). Heavy infections have been recorded at age of 9 - 12 months in donkeys of U.P (Pande & Rai, 1960). In present studies, we have enlisted percent infection of various worms encountered in Spiti pony from three different places of the state. The control strategies planned for aforesaid infection will lead to good health and will increase

Katoch and others

the longevity of equines. Sevendsen (1997) stated that parasites are the main cause of early demise of equines in third world countries as compared to nutrition and excessive work. Strategic deworming increase the working life span of animals by almost five years. By following this we can help farmers who are directly dependent upon these animals for their livelihood.

References

- Chaudhri, S.S; Yadav, C.L; Gupta, R.P; and Ruprah, N.S., (1985). Parasitic infections of equines in Haryana. *Indian J. Anim. Sci.* **55**: 769.
- Damodaran, S Ramachadran, P.V.J. Rahamathulla Khan, G.Aj and Thanikachalam, M., (1978). Equines diseases, a necropsy survey. *Cheiron.*, **7**: 56.
- Duncan, IL & Dargie,J.D., (1975). The pathogenesis and control of Strongyle infection in the horse. *J.S. Aft. Vet. Ass.***46** : 81-85.
- Enigk, K., (1950). Zur Entwicklung von *Strongylus vulgaris* (Nematoden) In wirtstier. *Z. Tropenmed. Parasit.*, **2** : 287 -306.;
- Katoch, R; Mandia RK; Agnihotri, RK; and Katoch, S (1999a). Occurrence of endoparasites in equines of H.P. *Himachal Vet. J.*, **3**:42-43.
- Katoch, R; Mitra, S; Agnihotri, RK; and Bhardwaj, R.L (1999b). Dictyocauliasis in donkeys-A constant threat for horses. *Centaur.* **10** :92-93.
- Kotwal, S.K; Sharma, RK; and Kalita, G., 2000. Epidemiological studies on internal parasites of equines of cold arid region of Ladakh. *Centaur.***17**: 39-41
- Kulkarni, S, Vijayasarthi, S.K, Jagannath, M.S, SrinivasaGowda, R.N and Seshadri, S.J.,(1989). A study on *DrachiaMegastoma* (Chitwood and Wehr, 1934) infection in horses. *Indian Vet. J.*, **66** : 899 - 900.
- Round, M.C., (1976). Lungwonn infection (*Dictyocaulus arnfieldi*) of horses and donkeys. *Veterinary Rec.*, **99** : 393 -395.
- Pande, B.P. and Rai, P., (1960). The nematode genus *Strongyloides* Grassi, 1879 in Indian livestock. Observation on natural infections in donkey (*Equus asinus*). *British Vet. J.*, **116** : 281 - 283.
- Sengupta, P.P. and Yadva, M.P., (1997). Occurrence of parasitic infections in ponies of Tarai region, Uttar Pradesh. *Indian J Anim. Sci.*, **67**: 462.
- Sevendsen, E.D., (1997). The Profession Handbook of the Donkey. 3rd edn. The donkey sanctuary, Sidmouth, EX 10 ONU, DEVON, UK.
- Soulsby, E.J.L., (1982). Helminths, Arthropods and protozoa of domesticated animals, 7th edn. Baillere Tindall, London.
- Wadhwa, D.R; Prasad,B; Mandia~R.K; and Rao, V.N., (1993). Endoparasites in equines of Himachal Pradesh - Its prevalence and clinical appraisal. *Centaur* **10** : 10-12.