



Communication

[Comunicação]

Prevalence of trichostrongylus in sheep in the district Zhob, Balochistan, Pakistan

[Prevalência de trichostrongylus em ovelhas no distrito Zhob, Balochistão, Paquistão]

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Sheep population is estimated to be 27.4 million heads in Pakistan (Economic..., 2010), and 12.8 million (48%) of these sheep are raised in Balochistan (Economic, 2011). Heavy economic losses have been reported due to parasitic diseases in livestock in Balochistan. Factors like exposure to parasites and climate trigger the infestation (Durrani, 1991). Khan *et al.* (1988c) reported 100% sheep internal parasitic infection in upland Balochistan. The prevalence of gastrointestinal nematodes of sheep has been 25.1 to 92% by different studies in Pakistan (Durrani *et al.*, 1981; Khan, 1985).

A total 120 GIT of sheep were collected randomly from the slaughterhouse in district Zhob and were sent to the lab for further investigation. The duration of the study was six months (June to December 2017). Sheep records were maintained on the prescribed pro-forma. The trichostrongylid worms were collected according to the standard procedures. Nematode collection was done from the abomasum and intestine within four hours after slaughtering of animals. Abomasum and intestine were sutured at the omasal-abomasal, Abomasal-duodenal and ileo-caecal junctions. Collected worms from each organ were counted as per the technique described by Charles and Baker (1988). Nematodes were washed and transferred to a vial. The worms were kept in this vial partially covered until all ethyl alcohol evaporated and worms were left in pure glycerol. Worms were identified under low power

microscope and identified as per the technique described by Soulsby (1982). The prevalence of different nematodes in different age, breeds and sex were analyzed through Minitab[®] 17.1.0.

From a total of 120 Sheep surveyed at Zhob, 47 male sheep (39.1%) and 73 female sheep (60.8%) were infested with mix nematodes ($p=0.001$). The number of sheep that were infested with *Trichostrongylus* were 23 (19.1%), 25 contained *Haemonchus* (20.8%), 35 got infested from *Cooperia* (29.1%), while 37 sheep contained *Nematodirus* (30.8%) ($p=0.087$). The rate with single type of parasite species i.e. one type of parasite was (32.5%) whereas 44 (36.3%) contained two and 37 sheep (30.8%) were infested with three types of parasite species ($p=0.366$).

It was observed that younger sheep are more susceptible to parasite infestation than older ones, also reported by Zvinorova *et al.*, (2016). Among 120 infected animals, 47 (39.1%) were male and 73 (60.8%) were female sheep and this was in agreement with the report of Zvinorova *et al.*, (2016). Two breeds were selected for this study viz Balochi and Rakhshani, and it was observed that the Balochi breed have more susceptibility than Rakhshani i.e. 70 (58.3%) and 50 (41.6%) respectively ($p=0.01$). Urquhart *et al.* (1996) stated that immunity develops with age against parasites along with the involvement of genetics. Male are more susceptible due to androgens.

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Young animals also get infested with the contaminated pastures.

The recovered species of parasite included *Trichostrongylus axei*, *Haemonchus contortus*, *Cooperia* and *Nematodirus*. *Nematodirus* was found to be the highest in prevalence i.e. 30.8% of the total flock, followed by *Cooperia* (29.1%), *Haemonchus* (20.8%), and *Trichostrongylus* (19.1%) ($p=0.087$). Overall higher (100%) internal parasitic incidence was recorded by Malik *et al* (1995) in ovine and caprine species in Punjab. Alyousif (1997) recorded 86.9% infestation with internal parasites in goats in Riyadh area of Saudi Arabia. While the infestation was comparatively low in the present study that might be due to different climatic conditions i.e., Punjab areas are mostly irrigated and more humid while Balochistan and Saudi Arabia are dry-land areas.

Khan *et al.* (1988a) reported prevalence of twelve species of internal parasites in sheep from the Kovak valley in Balochistan. Durrani *et al.* (1981) also reported similar species in sheep/goats in Jhelum valley of Punjab Province. While Khan *et al.* (1988b) also reported eighteen similar types as are in this present-day study. Differences in the incidence may be due environment and susceptibility as specified by Durrani *et al.* (1981). Radostits *et al.* (1994) stated that conditions for the translation of eggs to larvae are provided by warm and wet weather. Areas with a severe winter and dry summer result in decreased parasitic burden as seen in this study.

Keywords: ovine, *Cooperia*, *gastrointestinal parasites*, *Haemonchous contotous*, *Nematodirus*, *pakistan*

RESUMO

*Trichostrongylid em ovelhas foi estudado no Distrito Zhob, Balochistan. Foram coletados 120 tratos gastrointestinais (GIT) de ovelhas do matadouro do distrito. Estas amostras foram processadas para isolamento e identificação de nematódeos tricostrônquicos no Laboratório do Hospital Veterinário do Distrito Zhob. A taxa de prevalência geral foi de 39,1% em machos e 60,8% em fêmeas ($p=0,001$). A taxa de prevalência em duas raças viz Balochi e Rakhshani foi de 58,3% e 41,6%, respectivamente ($p=0,01$). A prevalência da espécie observada com *Trichostrongylus* foi 19,1%, *Haemonchus* foi 20,8%, *Cooperia* foi 29,1% e *Nematodirus* foi 30,8% ($p=0,087$). Quanto a quantidade de espécies infestadas pelas ovelhas, um único tipo de parasita estava em 32,5% de animais, dois tipos de espécies parasitárias em 36,3% dos animais e três tipos de espécies parasitárias em 30,8% dos animais ($p=0,366$).*

Palavras-chave: ovina, *Cooperia*, *parasitas gastrointestinais*, *Haemonchous contotous*, *Nematodirus*, *paquistão*

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