

Seasonal Prevalence of Gastrointestinal Parasites and Their Association with Trace Element Contents in Sera of Sheep, Grazing Forages and Soils of Sialkot District, Punjab, Pakistan

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Abstract : Gastro-intestinal (GI) helminths infection in sheep causes a substantial loss in terms of productivity and constitutes serious economic losses in the world. Different types of forages are rich in trace element contents and may act as a natural resource to improve the trace element deficiencies leading to immunity boost-up in general and against gastrointestinal parasitic infections in particular. In the present study, the level of trace elements (Cu, Co, Mn, Zn) determined in sera of different breeds of sheep, available feedstuffs, respective soil samples and their association with GI helminths in Sialkot district, Punjab, Pakistan. Almost similar prevalence of GI helminths was recorded (32.81%) during spring 2015 and (32.55%) during autumn 2014. The parasitic species identified from the microscopically scanned faecal samples of district Sialkot were *Fasciola (F.) hepatica*, *F. gigantica*, *Haemonchus contortus*, *Eimeria crandallis*, *Gongylonema pulchrum*, *Oesophagostomum* sp., *Trichuris ovis*, *Strongyles* sp., *Cryptosporidium* sp. and *Trichostrongylus* sp. Among variables like age, sex, and breed, only sex was found significant in district Sialkot. A significant ($P < 0.05$) variation in the concentration of Zn, Cu, Mn, and Co was recorded in collected forages species. Soils of grazing field showed insignificant ($P > 0.05$) variation among soils of different tehsils of Sialkot district. Statistically, sera of sheep showed no variation ($P > 0.05$) during autumn 2014, While, variation ($P < 0.05$) among different tehsils of Sialkot district during spring 2015 except Co. During autumn 2014 the mean concentration of Cu, Zn, and Co in sera was inversely proportional to the mean EPG of sheep while during spring 2015 only Zn was inversely proportional to the mean EPG of sheep. The trace element-rich forages preferably Zn were effective ones against helminths infection. The trace element-rich forages will be recommended for their utilization as an alternate to improve the trace element deficiencies in sheep which ultimately boost up the immunity against gastrointestinal parasitic infections.

Keywords : coprological examination, gastro-intestinal parasites, prevalence, sheep, trace elements

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