

Association of Phytomineral Supplementation with the Seasonal Prevalence of Gastrointestinal Parasites of Grazing Sheep in the Scenario of Climate Change

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Abstract : Changes in the climate are posing threats to the livestock community throughout the globe. Agro-grazing animals and natural vegetation as their forages are the most important components of animal production. Climate and local conditions not only determine the nature and kind of plants, their distribution, composition and nutritive value in different cropping belts and grazing sites but also influence number and kinds of grazing animals. Phytomineral supplementation can act as an indirect tool to boost-up immunological profile of animals leading to the development of resilience against parasitic infections. The present study correlates the trace element (Cu, Co, Mn, Zn) profile of grazing sheep, feedstuffs, respective soils and their GI helminths in a selected district of Sialkot, Punjab, Pakistan. Ten species of GI helminths were found during the survey. A significant ($P < 0.05$) variation in the concentrations (conc.) of Zn, Cu, Mn and Co was recorded in a total of 16 collected forages. During autumn, mean conc. of Cu, Zn and Co in sera were inversely proportional to the GI helminth burden; while, during spring, only Zn was inversely proportional to the GI helminth burden in grazing sheep. During autumn the highest conc. of Zn, Cu, Mn and Co were recorded in *Echinochloa colona*, *Amaranthus viridis*, *Cannabis sativa*, and *Brachiaria ramosa* and during spring in *Cichorium intybus*, *Cynodon dactylon*, *Parthenium hysterophorus* and *Coronopus didymus* respectively. The trace element-rich forages, preferably Zn, found effective against helminth infection are advisable supplemental remedies to improve the trace element profile in grazing sheep. This mitigation strategy may ultimately improve the resilience against GI helminth infections especially in the resource poor countries like Pakistan.

Keywords : coprological examination, Trace elements, Sheep, Gastro-intestinal parasites, Prevalence, Sialkot, Pakistan

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