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Epidemiology of ticks and tick-borne theileriasis in cattle and buffaloes of District Toba Tek Singh

Asif Iqbal

Riphah International University, Pakistan

Based on stratified random sampling, 4608 animals were screened during November, 2010-October, 2012 in central Punjab, Pakistan. The overall prevalence of ticks was recorded 52.14% (2403/4608) in host population of the study area. Out of infested host species, the abundance was found significantly higher in cattle as compared with buffaloes. Among the identified species of the ticks *Hyalomma anatolicum anatolicum* was found significantly predominant followed in order by *Rhipicephalus microplus* and *Rhipicephalus sanguineus*. The overall theileria infection in the acini of tick salivary glands was recorded 20.85% (1126/5400). *Hyalomma anatolicum anatolicum* (62.56%; 1126/1800) was the only theileria infected tick specie in the study area. The salivary glands of *Rhipicephalus microplus* and *Rhipicephalus sanguineus* were not found having any infection of theilerial sporozoites. Only type-III acini were found infected with the parasites. The infection was determined higher with Methyl Green Pyronine (MPG) stain in comparison with Geimsa stain. Between the sexes of tick, the level of infection was recorded significantly higher in female acini as compared with male acini. The infection was recorded significantly higher in ticks collected from riverine area as compared with the ticks collected from non-riverine areas. Similarly, infesting ticks were found having higher infection of theilerial sporozoites in their salivary glands as compared with questing ticks. Among the on-hosts, ticks infesting cattle were found with more burden of theilerial sporozoites than ticks collected from the body of buffaloes. Month wise prevalence of ticks showed that their abundance is higher in the month of June, July and August and lower during the months of December, January. The overall prevalence of bovine tropical theileriosis was found 49.87% (2298/4608) in cattle and buffaloes of the study area. *Theileria annulata* was the only prevalent specie of theileria in all positive animals. Overall and specie-wise prevalence of theileriosis in host population of the study depicted higher prevalence of bovine theileriosis in cattle as compared to buffalo population but the difference was not found statistically significant. Friesian breed of cattle was found with significantly highest prevalence of theileriosis followed in order by Jersey, Cross-bred and Sahiwal in perspective of the breed based prevalence. Theileriosis was statistically more prevalent in the Kundi breed of buffalo as compared to Nili Ravi. In perspective of the sex groups, female cattle and buffaloes were found statistically more prone to bovine tropical theileriosis than that of male cattle and male buffaloes, respectively. With respect to age groups, prevalence of theileriosis has been found significantly higher in young animals in comparison with the adult. In specie-wise prevalence, although prevalence of theileriosis was found higher in cattle in comparison with the buffalo population but the difference was statistically insignificant.

Biography

Asif Iqbal has completed his PhD from University of Agriculture Faisalabad, Pakistan. He is the Director of Academics in Riphah College of Veterinary Sciences, Lahore. He has published more than 25 papers in reputed journals and serving as a Managing Director of *Scholar's Advances in Veterinary and Animal Research*, a well reputed journal in Pakistan.

asif_chm@yahoo.com