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Seasonal Trends in Seroprevalence of FMD in Bovines under Different Environmental Conditions in Rural KPK, Pakistan

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Abstract

Foot and mouth disease outbreaks and its endemic nature in livestock had always remained a major problem in Pakistan. The present study was aimed to estimate the association between seroprevalence of FMD and ecological variation in selected rural villages of Khyber Pakhtunkhwa province. Meteorological variables from Pakistan meteorological department and sera samples from 2511 cattle and buffaloes were obtained respectively over a period of 1 year "between" July 2013- June 2014. Using 3ABC ELISA serum samples were tested identifying antibodies against FMD serotypes. From a total of 2511 sera, 9.83% tested FMD positive. True prevalence calculated was 7.42%. The highest prevalence was observed in sub humid zone, followed by humid and semi-arid zone. Seasonal pattern of FMD was also identified, showing significantly ($P < 0.05$) higher prevalence in monsoon followed by summer and post monsoon. It was concluded that several factors i.e. farming system, unchecked livestock movements (during religious festivals and trading of livestock from Punjab to KPK) and change in meteorological factors play a vital role in the prevalence of FMD. Based on this pertinent prevention measures are required to reduce future outbreaks considering local climatic conditions.

Key words: Climate, Endemic, Foot and mouth disease, Meteorological, Pakistan, Prevalence



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