

SEROPREVALENCE OF *LEPTOSPIRA BORGPETERSENII* SEROVAR JAVANICA INFECTION AMONG DAIRY CATTLE, RATS AND HUMANS IN THE CAUVERY RIVER VALLEY OF SOUTHERN INDIA

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Abstract. Leptospirosis is a major problem of dairy farms in Tamilnadu, India, resulting in abortions, stillbirths and infertility. Serologic and genetic analyses of samples from cattle, humans and rodents were performed in order to estimate infection prevalence and identify leptospiral species. Five hundred and fifteen sera and 76 urine samples were collected from dairy cattle on 25 farms including a farm that practiced rat control. Sera and kidney samples were also collected from field rats (*Rattus norvegicus*) in the vicinity of these farms. In addition, sera were collected from farm workers. Serum antibody was measured by the microscopic agglutination test. Leptospire isolates from blood, kidney, and urine were characterized as to serovar. Genomospecies were predicted using random amplified polymorphic DNA (RAPD) profiling. *SecY* gene sequencing was performed as a tool for tracing of source. Seroprevalence of 87.%, 51.% and 76.5% for cattle, rats and humans, respectively, was observed on endemic farms. Prevalences on a non-endemic farm were lower. Antibodies to Autumnalis, Javanica, Icterohaemorrhagiae and Pomona predominated in both cattle and rats. Thirteen isolates from rat kidneys were identified as serogroup Javanica, serovar Javanica. RAPD comparisons and *secY* gene sequencing identified these isolates as *Leptospira borgpetersenii*. These results altogether indicated that *L. borgpetersenii* was the dominant species in these areas with serovar Javanica apparently derived from rats which provided an important source of infection in cattle resulting a high incidence of infertility, abortion and still-birth in the Cauvery river valley, Tiruchirappalli, Tamilnadu.

Keywords: *Leptospira borgpetersenii* serovar Javanica, leptospirosis seroprevalence, cattle, humans, rodents

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