

Retrospective study on serological detection of leptospirosis in livestock in Malaysia

Ahmad Shuhaimy NE, Abdul Rahim S, Rosli RN, Sani A, Abd Aziz A, Simon Devasagayam DK, Mohd Saeid FH

Veterinary Research Institute, No 59, Jalan Sultan Azlan Shah, Ipoh, Perak, Malaysia

ABSTRACT

Introduction: Leptospirosis is caused by various species of *Leptospira*, a spirochete in the family Leptospiraceae. The detection of antibodies using microscopic agglutination test (MAT) against circulating serogroups and serovars is very important especially for import-export purposes as well as surveillance and confirmation of clinical cases. **Objective:** This study elucidates the seropositivity rate and the predominant serovars circulating among ruminants in Malaysia based on samples received in the Veterinary Research Institute (VRI) Ipoh from year 2011 until 2020. **Materials and methods:** A standard MAT was carried out against 15 available serovars in the VRI. Descriptive analysis was carried out to determine the predominant serovars circulating in the country from the year 2011 until 2020 (10 years). **Results and conclusion:** Throughout the study period, there were 39,103 cattle, buffaloes, sheep and goats samples tested. Out of the total samples, 54% (n=22,144) were from cattle, 27% (n=11,248) were from goats, 10% (n=4,088) from sheep and 3% (n=1,623) were from buffaloes. The overall seropositivity rate was 2.2% (n = 878). A total of 609 (2.8%) cattle samples were detected positive with *L. hardjo* (39.6%), *L. tarasovi* (26.6%), and *L. pomona* (14.3%) as predominant serovars. In addition, 165 samples (10.3%) were positive in buffaloes and predominant serovars were *L. hebdomadis* (32.7%), *L. pomona* (29.0%), *L. hardjo* (18.2%). Moreover, 0.7% (n=82) goats samples were detected positive with *L. hebdomadis* (30.5%), *L. australis* (25.6%) and *L. hardjo* (19.5%) as common serovars. The most predominant serovars in sheep are *L. hardjo* (68.0%) and *L. tarasovi* (32.0%) from 22 positive samples. Based on this study, the predominant serovar in cattle and sheep is *L. hardjo* and *L. hebdomadis* in buffaloes. In conclusion, these animals are continually being exposed to leptospires in the environment hence more effort are needed to determine the current status of leptospirosis with wide range of serovars.