

TITLE: A SEROEPIDEMOLOGIC STUDY OF CANINE LEPTOSPIROSIS IN THE STATE OF SÃO PAULO

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ABSTRACT:

Leptospirosis is an emergent zoonosis with global reach and variable incidence depending on region and time of the year. This zoonosis is caused by various serovars of *Leptospira spp.* of development from sharp to chronic. The dog has an important role in the epidemiology of the disease, especially in tropical countries. The species' predominant serovars are the *canicola* and the *icterohaemorrhagiae*. The serological diagnosis can be performed through the microscopical seroagglutination test (MAT). The objective of this study was to evaluate canine leptospirosis in the state of São Paulo during the period from January 2015 to May 2017. Serum samples from 348 dogs of 47 different cities were analyzed with MAT and sent to the Zoonosis Diagnosis Laboratory of UNESP Júlio de Mesquita Filho in Botucatu. There, the samples were tested for 13 serovars: *icterohaemorrhagiae*, *copenhagi*, *gryppotyphosa*, *djasiman*, *cynopteri*, *australis*, *bratislava*, *autumnalis*, *pomona*, *pyrogenes*, *hardjo*, *nupezo 01*, *canicola*. The sera were diluted in a 1:50 proportion and then pipetted in a microplate. When 50% or more of the observed leptospiras were agglutinated in comparison to their respective controls, the sample was considered positive. Dilutions equal or superior to 1:1000UI are considered seroreagent. The reagent sera in the trial test were submitted to a titration test. As interpretation criteria, we have titers between 200UI and 3200UI. Of the 348 samples, 43 (12.35%) had titers equal or superior to 100UI for the following serovars: *cynopteri* (16.28%), *copenhageni* (20.93%), *nupezo 01* (41.86%), *autumnalis* (0.43%), *australis* (9.30%), *gryppotyphosa* (27.90%), *pomona* (13.95%), *hardjo* (4.95%), *pyrogenes* (11.63%), *canicola* (0.43%), *djasiman* (4.65%), *icterohaemorrhagiae* (0.43%), taking into account coagglutination cases indicating that there might have occurred cross-reactions between the serovars. Larger infection rates were observed in March, June, September and October. This coincides with the periods of highest pluviometric rates, indicating that this is an important factor to the maintenance of leptospiras in the environment. Regarding the gender of the animals, 25 (58.13%) of the reagent sera were from males, while 18 (41.86%) were from females ($p = 0.14$). These results highlight the need for the implementation of strategies and the intensification of control measures to reduce the sources of canine infection and consequently the rates of contamination in both dogs and humans.

Keywords: Leptospirosis, canine, seroepidemiologic, microscopical seroagglutination test

