

ABSTRACT

In a serological and ecological study of the genus Leptospira in Jamaica, 535 sera from three species of livestock animals, bovine, porcine and caprine were serologically tested by the microscopic agglutination technique using live leptospiral antigens. Of the number tested, 316 (59.06%) were reactive with titers equalling or greater than 1:100. A total of **six** serotypes were identified and the representative serovars were as follows:- jules (serogroup Hebdomadis) 257 (51.92%); icterohemorrhagiae (serogroup Ictero-hemorrhagiae) 140 (28.07%); autumnalis (serogroup Autumnalis) 41 (8.3%); canicola (serogroup Canicola) 30 (6.06%); pomona (serogroup Pomona) 25 (5.19%) and abramis (serogroup Pyrogenes) 2 (0.4%). The porcine species recorded the highest percentage of reactive sera (65.5%) and the caprine the lowest (38.9%). The widest distribution of serotypes occurred in pigs. A comparison of the parishes showed that the positive sera from Portland (80.9%) and Westmoreland (71.6%) topped others and St. Andrew had the lowest 11.0%.

For the ecological study, 22 soil and 25 water samples collected from five selected livestock farms in the island were cultured initially in enrichment artificial medium (Ellinghausen and McCullough semi-solid), ESS, incorporating 5-fluorouracil, for the isolation of leptospires. A total of 23 (48.9%) isolates were obtained:- 16 (72.7%) from the soil

samples and 7 (28%) from the water samples. One water isolate was lost and the 22 parent isolates were subsequently inoculated into weanling hamsters. The kidney tissues and heartblood of the inoculated hamsters on culture yielded 8 leptospiral isolates and the microscopic agglutination test of the sera of inoculated hamsters gave 9 reactive results. There was no positive results either from culture or serological test of the control (uninoculated) hamsters.

The investigations revealed that the constituents of Jamaican soil, the heavy rainfall and the various environmental factors are ideal for the survival and distribution of leptospires in the island. Flooding helps to spark off epizootic outbreaks and the leptospiral serotypes mentioned earlier are enzootic and endemic in Jamaica. The predominant serotypes are jules and icterohemorrhagiae. People at high risk are the livestock attendants and milkers.

The epidemiological importance of the serotypes identified and suggested means of dealing with their adverse effects are discussed.