ABSTRACT

A Sero-Epidemiological Survey of Leptospirosis
Among Jamaican Human and Animal Populations

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To date, relatively little research on leptospirosis has been undertaken in Jamaica and the Caribbean as a whole. This is despite the apparent role of this disease as a zoonosis. The major objective of this survey was that of determining the current status of leptospirosis in the Jamaican human, livestock and sylvatic populations through a sero-epidemiological approach.

Sera for this survey were randomly selected from the ongoing National Brucellosis and Leptospirosis Control Programme serum banks at the Veterinary Diagnostic Laboratory at Hope, in addition to sera collected island-wide on special field trips. Leptospiral titres were determined by the Microscopic Agglutination Test (MAT), the standard reference procedure as described by Galton et al and modified by Cole et al. All sera were tested against the following five leptospiral antigens: abrimis, autumnalis, canicola, icterohaemorrhagiae, hardjo, grippotyphosa, jules, bomona, portland-vere, monymusk, bog-vere and pyrogenes. A presumptive positive reaction was based on a 1:100 dilution or greater to any of the test antigens used. Leptospiral determination of the approximately 12,000 sera used indicated high seroprevalence rates for all species studied. Seroprevalence rates were being reported in poultry for the first time in Jamaica.

The most frequent presumptive infecting serovars found in this particular survey were portland-vere, canicola, icterohaemorrhagiae and jules. These predominated in nearly all the species

surveyed. The serovar jules is unique to Jamaica and its comparatively high prevalence in both the human and animal populations indicates a necessity for further investigation.

The highest yearly seroprevalence rate (46%) was recorded for 1986. There were no significant differences observed in sex-related seroprevalence rates for humans while age, geographical and occupational seroprevalence relationships were significant. The periods accounting for the highest precipitation had correspondingly the highest leptospiral seropositive rates. This study has confirmed that leptospirosis is both an endemic and enzootic condition in Jamaica and that the dimension of the problem may be greater than current information suggests.

The results further indicate that serological surveys are useful tools and provide a pragmatic approach to the greater understanding of the epidemiological patterns of leptospirosis.

An intensified national ongoing leptospirosis control programme along with an assessment of the economic impact of this disease on livestock production and its public health significance are urgently needed.