



Integrated Strategies for the Control of Leishmaniasis in the Municipality of Teodoro Sampaio, SP, from a Geographical Perspective, Supported by

Geoprocessing

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Introduction: This study is justified since very little is known of the relationship between Leishmaniasis and the spatial transformation process. In the past, the municipality of Teodoro Sampaio has spread ACL and recently cases of visceral Leishmaniasis have been found in dogs in the urban area, making the municipality a likely area for the convergence of both manifestations of the disease. The overall aim is to relate recent spatial transformations with the pattern of spatial distribution of the infection's vectors and hosts, keeping in mind the integrated geographic distribution of ACL and AVL. **Methods:** The study has two levels of aggregation: (a) a population-based case study of the municipality of Teodoro Sampaio, Pontal do Paranapanema, in the state of São Paulo, designed to be quantitative, descriptive and cross-sectional, and (b) population-based across the municipalities of São Paulo state, designed to be retrospective, quantitative, observational and descriptive. The choice of two approaches to the study is justified by a consideration of the articulations which enable the formation of production circuits for Leishmaniasis in the region. The gathering of data for the Teodoro Sampaio case study underwent two phases: field study and by means of secondary official data sources. Data concerning the state of São Paulo comes from secondary sources. **Conclusion:** As it is a focal disease, the data presented allows us to infer that AVL spreads from Sector 1 of the urban area to Sector 3, because the vector relevant to transmission is within the former. The ACL pattern in Teodoro Sampaio is thought to be based in the woodlands surrounding the urban area, in general terms, based in the Parque Estadual do Morro do Diabo (PEMD), the edge of which is five kilometres from the centre of the district. Exchanges take place between the urban area of the municipality, the PEMD, the settlement of Ribeirão Bonito, which forms part of the transect making up the geosystem of Teodoro Sampaio, and Pontal do Paranapanema. Human intervention can be seen as the main agent in promoting these exchanges between environments due to the transit of people between subgeosystems and the interrelationship with other municipalities encouraging the spread of the disease. The only municipalities to be among those with a high incidence of AVL are Araçatuba and Presidente Prudente, although the number of cases is growing and becoming more concentrated. The state presents a circumscribed hub of AVL cases in the region of Campinas and Piracicaba, and another in Pontal do Paranapanema. This interaction borders on Mato Grosso do Sul, giving rise to the main circuit AVL instances of the Southeast. ACL has a hub at Itapetininga, which is next to Vale do Paraíba Paulista, also leading to interactions across the border with the state of Rio de Janeiro and its principal circumscribed centres of transmission of ACL. This will be Brazil's next ACL production circuit. It was possible to identify areas in the state of São Paulo particularly vulnerable to Leishmaniasis with particular distributions for each of the two types of the disease, sometimes existing together. Outbreaks of canine VL do not depend on distribution rules on a small scale, although the effect of many outbreaks together clarifies a spatial pattern, as seen in the state of São Paulo. Patterns of transmission of Leishmaniasis are established in the state of São Paulo and the data analyzed helps to verify these patterns.

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