

Medicina Veterinária

A SPATIOTEMPORAL ANALYSIS OF BOVINE BRUCELLOSIS CASES IN MINAS GERAIS STATE, BRAZIL, FROM 2011 TO 2018

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Resumo

Our study explored the patterns of bovine brucellosis dissemination in Minas Gerais state, Brazil, by examining data on passive surveillance of bovine brucellosis cases from the Instituto Mineiro de Agropecuária (IMA) (Animal Health Authority), as well as cattle population and bovine brucellosis testing, from 2011 to 2018 by means of a spatiotemporal analysis. We plotted cases, populations and testing distributions and performed spatial autocorrelation (Moran's I test) and local indicators of spatial autocorrelation (LISA) analyses. Moreover, we assessed the correlation of the spatial distribution and the compiled data (brucellosis cases, cattle populations, and brucellosis testing) by Lee's test. Our results showed that bovine brucellosis cases occurred mainly in the Triângulo Mineiro, Alto Paranaíba and Northwest regions, which reported cases in all analyzed years (2011 to 2018). The cattle population of Minas Gerais was concentrated in the same regions as bovine brucellosis cases, and tests were performed. Moran's I test results of the case data showed significant spatial autocorrelation in 2011, 2015 and 2018 (p value < 0.05), and from 2011 to 2018, the population and testing data were also significant in Moran's I test (p value < 0.00). The results of cluster analysis (LISA) of cases showed clusters mainly in the Triângulo Mineiro, Alto Paranaíba, Northwest and South regions in 2011, 2015 and 2018. The local clusters for cattle populations and brucellosis testing were also observed in the same regions as bovine brucellosis cases in all years (2011 to 2018). The correlation results between clusters (Lee's test) were 0.22 (p value: 0.000) in 2011, 0.15 (p value: 0.000) in 2015 and 0.43 (p value: 0.000) in 2018 between cases and populations, and 0.25 (p value: 0.000) in 2011, 0.14 (p value: 0.000) in 2015 and 0.38 (p value: 0.000) in 2018 for testing and cases. Therefore, our results showed that brucellosis cases were distributed together with cattle populations and brucellosis testing data, indicating that brucellosis in cattle in Minas Gerais state is being identified where there are more animals and where more tests are performed.

Palavras-Chave: *Brucella abortus*, epidemiology, Lee's test.

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