

**TITLE:** TUBERCULOSIS IN CATTLE SLAUGHTERED IN THE INTERMEDIATE GEOGRAPHIC REGION OF CAICÓ, STATE OF RIO GRANDE DO NORTE, BRAZIL.

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## **ABSTRACT**

The bovine farming constitutes an economic and social activity of great importance for the State of Rio Grande do Norte, contributing for the creation of jobs and generation of income. However, factors related to the low technification of the activity on the part of the producers, the occurrence of a wide and intense drought in the last years and the presence of infectious diseases have caused significant damages to the breeders of animals in the State. Infectious diseases include tuberculosis, which is a zoonotic infection caused by *Mycobacterium bovis*, the primary host of which is cattle, but several domestic and wild mammal species, including humans, are also susceptible. The objective of the study was to determine the occurrence of tuberculosis in bovine slaughtered in two public slaughterhouses of the intermediate geographic region of Caicó, State of Rio Grande do Norte. Between November 2017 and August 2018, a total of 11,616 bovine carcasses underwent routine *post-mortem* inspection, with lesions suggestive of tuberculosis in one animal (0.009%). Samples of tissues located in the lung, heart and spleen were submitted to bacteriological culture and molecular diagnosis. The omentum was used for histopathological examination and Ziehl-Neelsen staining. The lesions were cultured for 90 days in Stonebrink medium, but there was no growth. When nested-PCR was used, the lung, heart and spleen samples were positive. The histopathological examination of the omentum showed the presence of multiple granulomas of necrotic center and areas of mineralization and when they were submitted to Ziehl-Neelsen staining, it was detected the presence of alcohol-acid resistant bacilli (BAAR). In this way, it can be verified that the microbiological culture, despite being considered gold standard, can present false negative results, besides being a time-consuming technique, making it difficult to use for surveillance in slaughterhouses. The presence of a positive animal in the study represents a problem regarding public health, especially for breeders, slaughterhouse workers, technicians and the end consumer. Nested-PCR and histopathology present fast and effective results for the diagnosis of the disease. Therefore, one of the essential systems applied to the control of bovine tuberculosis is the epidemiological surveillance of animals in slaughterhouses.

**Keywords:** bovine tuberculosis; food safety; *Mycobacterium bovis*; slaughterhouses