

Risk Factors for Infection of Bovine Tuberculosis in Cattle and Communal Farmers Living at the Wildlife-Livestock-Human Interface In Kwa-Zulu Natal, South Africa

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Cattle are the reservoir of *Mycobacterium bovis* (*M. bovis*) but many other domestic and wild animals including humans can be affected by bovine tuberculosis (bTB). In South Africa, bTB in cattle is only partly controlled and the African buffalo (*Syncerus caffer*) is the reservoir of *M. bovis* in several ecosystems infected with *M. bovis* and gives rise to a complex wildlife-livestock-human interface which increases the risk of *M. bovis* transmission. A collaborative study with the Department of Health was conducted to investigate the occurrence of *M. bovis* in members of 75 households associated with bTB infected herds. The initial screening was done using the GeneXpert for the *Mycobacterium tuberculosis* complex (MTC) followed by speciation using molecular techniques. A questionnaire was administered to the farmers to investigate the communal farmers' risk practices to bTB transmission among cattle and to humans. Out of 71 respondents 63 (89%) of the individuals did not know about bovine tuberculosis in wildlife and 61(86%) of the respondents were aware of bTB in cattle but 70% of these were not aware of its transmission to human. There is regular contact of cattle from different herds during grazing as all the farmers use communal pastures. The frequent consumption of unpasteurized milk as fermented milk (amasi) was identified as an important risk factor for bTB transmission to humans. The study has demonstrated poor knowledge of most cattle owners concerning bTB and its transmission pathways among people, livestock and wildlife. This is part of a One Health study that was designed to assess the role of *M. bovis* at the interface of cattle, human and wildlife.