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## Camel Brucellosis: A Disease Barrier to Sudan's Camel International Trade due to Slight Differences in Testing Results

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### Abstract

Brucellosis is a chronic infection caused by intracellular bacteria belonging to the genus *Brucella*. Freedom from this disease is a pre-requisite for exportation of live animals, especially the camels, because of the zoonotic nature of this disease. During the last few years, brucellosis emerged as one of the most important disease barriers to Sudan's international camel trade. Whole camel shipments were returned to Sudan from Saudi Arabia due to few animals being found sero-positive for brucellosis - despite all animals were tested negative before being shipped. Precautions such as double testing of all camels in the primary and final veterinary quarantines and application of the last test shortly before shipment did not completely solve the problem; some camel shipments are still rejected from time to time for the same reason. To address this problem, camel sera were tested twice with different batches of Rose Bengal antigen, the same sera were tested in two different laboratories and different times, standard and modified Rose Bengal test (RBT and mRBT, respectively) protocols were used. Different batches of RBT antigen and different labs as well as RBT and mRBT gave consistent results, with some differences in the degree of agglutination and agglutination time. It was concluded that this problem of rejection of export camels due to brucellosis can be partially attributed to these slight differences between the results of different labs and/or different batches and protocols that are routinely used for brucellosis testing.

**Keywords:** Brucellosis, camel, modified Rose Bengal Test, Sudan