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## Investigation of Cameline Trypanosomiasis in Mid-Eastern Sudan Using AgELISA in Conjunction with Parasitological Examination

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### Abstract

The major constraint to camel productivity in the Sudan is trypanosomiasis caused by *Trypanosoma evansi*. Currently, diagnosis is based on clinical signs and/or parasitological confirmation, but clinical signs are not pathognomonic and detection of trypanosomes in the blood is frequently difficult. In this study, the antigen detection enzyme-linked immunosorbent assay (AgELISA) in conjunction with parasitological examination of blood (buffy coat technique (BCT) and packed cell volume (PCV)) were used to study the enzootic situation of trypanosomiasis in camels in Butana plains, mid-Eastern Sudan. Over a one year survey (from November 1989 to October 1990), a total of 1738 randomly selected camels were sampled. The survey showed that the infection is endemic among pastoral camels with a prevalence of 5.4% based on parasitological examination and 31.3% based on AgELISA. The infection rate was significantly ( $p < 0.05$ ) higher during the dry period (November to May) than the wet season (June to October) based on BCT and it was slightly higher with AgELISA. Young camels had a much lower infection rate based on parasitological techniques, but they had a higher infection rate with AgELISA. A higher prevalence of infection was detected by BCT in herds of camels raised by nomads compared with those kept by agropastoralists and in camels located in the southern than those located in the northern districts of Butana plains. AgELISA compared to BCT was 68.8% sensitive and 70.2% specific.

The AgELISA test system was developed by the joint Food and Agriculture Organization and International Atomic Energy Agency (FAO/IAEA) division, Austria, in collaboration with the Centre for Tropical Veterinary Medicine (CTVM), Scotland.

**Keywords:** Camel, *Trypanosoma evansi*