

Survey of Brucellosis in Camels Intended for Export in North Kordofan State, Western Sudan

Hala Elrayah, A. ¹; Huda, A. O¹; Yagoub, I. A² and El Sanousi, Enaam, M¹.

¹Veterinary Research Institute, Sudan

²Elobied Veterinary Research Laboratory (Sudan).

Introduction

Of 19 million camels in the world, 15 million are found in Africa and 4 million in Asia. The one humped camel (*Camelus dromedarius*) is an important livestock species in Sudan where more than 4,500,000 head of camels are hosted, which constitute a major source of income for their owners and consequently the national economy.

Brucellosis is a disease caused by varies species of the genus *Brucella* and is the most widely spread zoonosis worldwide (Dawood, 2008) and one of the diseases that negatively affect animal trade.

Brucellosis is transmitted from animals to humans by ingestion of raw milk, milk products, raw liver, and direct contact with animals (Cooper, 1992). Camels are not known to be primary hosts of brucella organisms, but they are susceptible to both *B. abortus* and *B. melitensis* (Musa *et al*, 2008).

Materials and Methods

Study area: This work was done at Elobied Veterinary Research Laboratory as routine diagnosis for camels intended for export in the period from January 2004 to December 2008 in North Kordofan State, Western Sudan, which is located in the center of Sudan. It is delimited by six states; they are the Northern, Khartoum, the White Nile, South Kordofan and North Darfur States.

Study population: The study populations were camels that were prepared for export from the Er-rahed and Elkhowi quarantines.

Sampling method: the sampling method used in this study was simple random sampling for homogeneous sampling units.

Samples were collected from Er-rahed and Elkhawi quarantines; records were obtained for five years ago started from January 2004 till the December 2008.

Collection of samples for serological examinations: Convenient blood samples were collected from the jugular vein in a clean vacutainer tubes and submitted to the laboratory in ice container. The serum was decanted from the samples for diagnosis of bucellosis by Rose Bengal Plate Test (RBPT). Brucella colored whole cell antigen used in this test was obtained from the Department of Brucella, Veterinary Research Institute (VRI), Sudan.

Results

Results of samples which were submitted to Elobied Veterinary Research Laboratory for the five years for brucellosis diagnosis were shows that the total samples which examined for brucellosis in the year 2004 were 2938 sera samples from which 207 samples were found positive by RBPT which represent (7.0%) of the total samples. There were no submitted samples in the first three months of the year.

The study showed that the highest positive rate occurred in October (6.5%) while the lowest positive rate was found in May (2.9%). In the year 2005, 4308 sera samples were examined by using RBPT, among them 374 were found positive with percentage of (8.68%). In this year, no samples were tested in October. The highest positive rate appeared in November (15.91%), while the lowest positive rate was seen in January (2.8%). All samples submitted to the lab in the year 2006 were 1952, from which 210 were found positive with (10.76%) total positive rate. In January and November no samples were received. The highest positive percentage was shown in August (20.1%) and the lowest shown in March (0%). In the year 2007, Eight months in this year no samples were received at the laboratory. The total samples received for the remaining months were 687, the positive from it were 44 where the percentage was (6.4%). The highest positive percentage was shown in February (13.64%) and the lowest was shown in November (0.83%). In the year 2008, There were no samples received in ten

months during this year. The total serum samples submitted to the lab were 120, the positive among it were 17 samples, which represented (14.17%). The highest positive percentage was shown in May (16.0%) and the lowest shown in September (5.0%).

the comparison between the collected camel samples and ratio of positive samples for brucellosis in the five years show that The highest percentage of positive samples was demonstrated in the year 2008 and the lowest in 2007. In 2005 the lab received the highest total number of serum samples (4308), while the lowest number was in 2008 (120).

Conclusion

The results of the present investigation indicated that, brucella exist within camel herds in North Kordofan State. Therefore, continuous screening of the camel herds is recommended to assess the situation of the disease and even to identify the brucella species involved. Moreover, epidemiological studies needed to explore the current status of the disease in other ruminants and to enable the veterinary authorities to organize comprehensive program for prevention of the disease within different animal herds.