

A two year study on bovine trypanosomosis in Kassala State, Eastern Sudan (2007-2008)

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INTRODUCTION

Trypanosomosis in animals is caused by extracellular flagellate protozoan parasites under the genus *Trypanosoma* of Family Trypanosomatidae. In cattle there are different species of trypanosome causes the disease these are *Trypanosoma congolense*, *Trypanosoma brucei brucei* and *Trypanosoma vivax* (Uilenberg and Boyt, 1998) which transmit cyclically by *Glossina spp.* (Tse tse flies) in humid and semi-humid zones in sub-Saharan Africa in an area of 10 million Km² (Black and Seed, 2002). *T. vivax* and *T. congolense* can be transmitted mechanically by biting flies such as Tabanids and Stomoxys (Desquesenes and Dia, 2003a, Desquesenes and Dia, 2003b). Abdalla *et al.* (2005) reported that out-side the tse tse belt *T. vivax* is the causative agent of the disease in cattle in central Sudan during dry and wet seasons. In Kassala state, the incidence of the disease was 0.6% between years 1994 and 2003 (Salih *et al.*, 2005). This work reports the prevalence rate of bovine trypanosomosis in Kassala State during 2007-2008 and the role of the seasonality in the incidence of the disease.

MATERIALS AND METHODS

Kassala State lies between latitudes 15°-17°N and 15°-24°S and longitudes 37°-55°E and 35°-55°W. A total of

1008 blood samples were collected from cattle herds in Kassala, Elgash, Atbara river and Setit localities. The study was carried out between January 2007 and December 2008. The sampling was done in winter (November, December, January and February); summer (March, April, May and June) and autumn (July, August, September and October). Samples examined were thin dry blood smears stained with Giemsa 10% for 20 minutes, and then examined using light microscope.

RESULTS AND DISCUSSION

In this study, 16 out of 1008 (1.58%) were positive to *Trypanosoma vivax*. This incidence rate was much higher than the previous years 2004 to 2006 which was 0.1% (Omer *et al.*, 2007); this might be due to the high levels of rainfall in year 2007 (average 105.5 ml) during autumn. The concentration of vectors directly proportional with high levels of rainfall (Karib, 1961).

The prevalence rate of bovine trypanosomosis, in the Sudan outside the tsetse area, is influenced by annual rainfall (Rahman, 2005). The study conducted in Sinjah area (Central Sudan) between years 1991 and 1994 showed that infection rate was 1% in 1992, 6% in 1993, and 27% in 1994 when the rates of rainfall were 475.3mm, 423.0mm and 938.3mm, respectively (Rahman, 2005).

As shown in table (1) the infection rate in winter is higher than autumn, while no positive animals detected in summer. Similar findings reported by Abdelsalam, (1996)

Table 1. The percentage of bovine trypanosomosis during seasons from 2007 to 2008

Seasons	No. samples examined	No. positive
Winter	523	14 (2.7%)
Summer	290	0 (0 %)
Autumn	245	2 (0.8%)

who attributed the increase of the prevalence rate to abundance of biting flies, which was higher in rainy season than dry season and Abdalla et al .,(2005) which found the infection with *T. vivax* increase substantially during long rainy season (June- October) and remained high during early dry season (November).

It is recommended that, the application of non conventional techniques such as serological tests like Card Agglutination Test, Indirect fluorescent antibody test, Complement Fixation Test and Enzyme Linked Immunosorbent Assay have to be use in diagnosis. Detection of parasite DNA using Polymerase Chain Reaction and Restriction Fragment Length Polymorphisms would provide good and more reliable results.

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