

بسم الله الرحمن الرحيم

Sudan University of Science and Technology  
College of Graduate Studies

Sero-Prevalence and Risk Factors of Equine Infectious Anemia  
(EIA) in Khartoum State - Sudan

نسبة انتشار اضرار اضرار فيروس مرض فقر الدم المعدي في الخيول وعوامل الخطر للمرض

في ولاية الخرطوم – السودان

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## **DEDICATION**

This work is dedicated to my teachers , Doctor Sobhi Ahmed Mohammed Khair, Professor Mohammed Elamin Hamid and to the souls of Professor Ali Basheer, Doctor Nasreldin Aashoor and Professor Mohammed Elnasri Hamza.

It is also dedicated to my son , soul of my husband Khalid Osman and to my dearest Osama Mubarak Osman, with great love, respect and gratitude .

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## **Abstract**

A cross-sectional study was conducted to estimate the seroprevalence of Equine Infectious Anaemia (EIA) in Khartoum State, Sudan using Enzyme Linked Immunosorbent Assay from 31 August to 23 September 2013. Sera samples were collected from 184 equines (112 donkeys and 72 horses). The results showed that 6 of the donkeys (5.4%) and 10 of the horses (13.9%) were positive. The overall sero-prevalence recorded in this study was 8.7% .

Hypothesis testing for association between disease and potential risk factors ( locality, animal species, color, sex, age, animal body condition, presence of other disease, veterinary service, type of work, housing, presence with other animals, source of water, type of grass and presence of vectors) was first tested by the univariate analysis. Nine of the risk factors (locality, animal species, Sex, animal body condition, type of work , veterinary service, presence with other animals, type of grass and presence of vector) were significantly associated with the disease ( $P\text{-value} \leq 0.25$ ). The multivariate analysis showed that only four of the risk factors: locality, animal species, type of grass and presence of vector had a significant association with the disease ( $P\text{-value} \leq 0.05$ ) .

These results raised up an urgent need to initiate a realistic network for surveillance, control and eradication of such important disease.

## ملخص البحث

اجريت هذه الدراسة لتحديد معدل إنتشار فيروس مرض أنيميا الخيول المعدية وعوامل الخطورة فى ولاية الخرطوم بالسودان ,تم جمع 184 عينة مصل من الخيل و الحمير فى مناطق مختلفة من وحدات إدارية تتبع محليات ولاية الخرطوم .(112 عينة مصل من الحمير و72 عينة مصل من الخيول ). تم إستخدام تقنية المقاييس المناعية الغير مباشرة المرتبطة بالإنتيم .من 112 عينة مصل من الحمير 6 عينات مصل كانت موجبة بنسبة (4.5% ) أما فى الخيل فمن مجمل 72 عينة مصل 10 عينات من المصل وجدت موجبة بنسبة (13.9% ) . من المجموع الكلى للأصا 16 عينة مصل موجبة للفحص بنسبة (8.7%) وهو عبارة عن نسبة إنتشار أصداد فيروس أنيميا الخيول المعدية من مختلف الأعمار فى ولاية الخرطوم.

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