DEDICATION

This Work is dedicated to:

My Parent

My brothers, Sisters and friends

Those who take care of me, tied me with love, help and respect

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Abbreviations

AHEDC: Animal Health and Epizootic Diseases Control

AU-IBAR: African Union- International Bureu of Animal Resources

ARIS: Animal Resource Information System

BCT: Buffy Coat Techniques

CAHWs: Community Animal Health Workers

CFSPH: Centre for food security and Public health

CFT: Complement Fixation Test

CVRL: Central Veterinary Research Laboratory

DBMS: Database Management System

DFID *UK* Department for International Development

DS: Dairy System

DALYs: Disability Adjusted Life Years

FAO/UN: Food and Agriculture Organization of the United Nation

GIS: Geographic Information Systems

HAT: Human African Trypanosomsis

ISCTRC: International Scientific Council for Trypanosomosis Research and Control

KETRI: Kenya Trypanosomosis Research Institute

KIVI: Kit for invitro cultivation

MARF: Ministry of Animal Resources and Fisheries

MHCT: Micro-Haematocrit centrifugation technique

NOAA: National Oceanographic and atmospheric administration

OIE: Office International Des Epizootics

OAU\STRC: Organization of African Union/ Scientific and Technical Research Council

PAAT: Programme against African Trypanosomsis

PA: Participatory Appraisal

PACE: Pan African Control of Epizootics

PCV: Packed Cell Volume

PDS: Participatory Disease Search

PID: Pace Integrated Database

PPR%: Point Prevalence Rate

RS: Remote sensing

TC: *Trypanosme conglense*

TCP: Technical Cooperation programme

TV: *Trypanosome vivax*

TM: Traditional Migratory

TS: Traditional Sedentary

WKS: West Kordofan State

Abstract

The aim of this study is to assess and contribute to the knowledge of the epidemiology and spatial evaluation of bovine trypanosomosis in West Kordofan State during dry and wet season in 2001-2002.Trypanosomosis data from West

Kordofan State in 2001-2002 were collected, analyzed by using Geographic Information Systems" GIS".

A geographic information system (GIS) is an integrates hardware, software, and data for capturing, managing, analyzing, and displaying all forms of geographically referenced information. The underlying reason for using a GIS in an animal health information system is to enable the spatial component of animal health to be incorporated in the reporting and analysis of animal health data.

Sampling was stratified according to livestock management systems, three management systems were identified in this survey, the traditional migratory "TM", traditional sedentary "TS" and dairy system "DS" .

Cross sectional – single visit prevalence for parasite detection was conducted as the main activity during dry and rainy season.

Economic studies were conducted to calculate the stocking density and total biomass in the West Kordofan State.

Database was designed, corresponding tables to data entry and questionnaires were created in Microsoft Access2003, and queries were made. Geographic information system "GIS" functions were used. Maps were produced, and overlays of different data layers allowed highlighting potential priority areas were made. Microsoft Excel2007 and Animal Resources Information Systems "ARIS" software were used in data entry and analysis, graphs –charts and maps were made.

Total of 911 cattle were examined during dry season and 841cattle during wet season. Point prevalence rates PPR % of the only detected trypanosomes in this

survey which is *T.vivax* were calculated in the different seasons, dry season prevalence appeared as follows: 3.40 %, and during wet season appeared as 2.62 %.

Packed cell volume "PCV" of all animals ± standard deviation "Std" during dry season was calculated as 25.2±4.6 and during wet season as 32.2±3.0, this compared to PCV ± Std of infected animals during dry season which was 22.5±20.4 and during wet season was 29.3±k1.6.

Traps were made, 238 *Ttabanus* flies were caught from Kailk, Abyey, Lagawa, ElSonoot, Mairum, Mujlad and Kejaira.

Trypanocides usage has been evaluated in the West kordofan, results of this study indicated that **Ethydium bromide** was the most trypanocide used in Abyey , Alfula , Alkhiwi , Almujlad , Babanosa , Kadam , Kailk & Lagawa which showed 100 % of usage. While, Abuzabad showed 92.1 %, Almarum was 50%, Alsonoot was 64% & Kejaira 53.8 %.Only the Almarum province showed 36.7% of **Novidium** usage. 100 % of Berenil usage was appeared in Alnuhood and Odyah.

ملخص الاطروحة

أجريت هذه الدراسة للمساهمة في معرفة داء المثقبيات في الابقار ولتقييم انتشاره الجغرافي في 2001-2002 "فترتي الصيف والخريف" كأداة مساعدة في مكافحة المرض بولاية غرب كردفان .

تم جمع المعلومات بعد اداء المسوحات الحقلية بواسطة اتيام وزارة الثروة الحيوانية في 14 محلية بالولاية في فترتي الصيف والخريف ، وقد تم تحليلها باستخدام برامج نظم المعلومات الجغرافيةGIS بعد تصميم قاعدة للبيانات باستخدام اكسس .

نظام المعلومات الجغرافية هو نظام قائم على الحاسوب يعمل على جمع وصيانة وتخزين وتحليل وإخراج وتوزيع البيانات والمعلومات المكانية. وهذه أنظمة تعمل على جمع وادخال ومعالجة وتحليل وعرض وإخراج المعلومات المكانية والوصفية لأهداف محددة، وتساعد على التخطيط واتخاذ القرار في مجال الزراعة والثروة الحيوانية وغيرها من المجالات الاخري. ويتم استخدامه في مجالات مكافحة الامراض الوبائية من حيث تحديد مواقع الامراض وانتشارها جغرافيا ، رصد حركة الحيوانات ، تحديد استراتيجيات مكافحة الامراض من خلال عمل قطاعات جغرافية zone لتوزيع المرض.

تم ادخال كل المعلومات الخاصة بالمسوحات والتي جمعت بواسطة فورمات المسح. حيث تم تصميم خرائط توضيحية لتوزيع المرض بالولاية، تقدير مستوي الامطار والغطاء النباتي، رصد حركة الحيوانات داخل وخارج الولاية، تقديرنسبة الانيميا وتأثيرها علي حدوث المرض،توزيع وانتشار الحشرات الناقلة للتربانسوم، توزيع وانتشار استخدام الادوية المعالجة للتربانسوم.

جمعت 911 عينة دم في فترة الصيف و841 عينة في فترة الخريف . وشمل جمع العينات مختلف انواع سلالات الابقار مثل البقارة والبطانة والكنانة والفلاتة ومختلف الاعمار من هذه السلالات.

واظهرت نتائج التحليل وجود طفيل تربانسوما فيفاكس – المثقبية الوحيدة الوحيدة في المنطقة ، وتم تحديد انتشارها 3.40% في فترة الصيف و 2.62% في فترة الخريف.

كما تم مقياس مكداس الدم PCV ومستوي الانيميا ، كما تم مقارنته باضافة مستوي الانحراف المعياري.

تم جمع الحشرات الناقلة للطفيل بواسطة مصيدة الحشرات traps وتم تحديدها بواسطة المعمل المركزي للابحاث البيطرية بسوبا وقد اثبتت النتائج وجود التابانس *Tabanus* كناقل رسمي للطفيل بالولاية.

تم تقييم استخدام الادوية المعالجة للمرض مثل **الاثيديم بروماید،** برينيل ونوفيديم. وقد اثبتت الدراسة بان الاثيديم بروماید سجل اعلي نسبة استخدام 100% في كل من ابي، الفولة،الخوي، المجلد،بابنوسة،كدام، كيلك ولقاوة. و92.1% فيابوزبد، 50% بالميرم،64% في السنوط و53.8% في كجيرة.

أعلي نسبة استخدام **النوفيديم** 53.8% بالميرم. واعلي نسبة لاستخدام **البرينيل** 100% في النهود واوضية.