Sudan University of Science & Technology

College of Graduate Studies

The feed and feeding Habits of Tiang (*Damaliscus korrigrum*) in the Sudd Region–Sudan

التغذية والعادات الغذائية للتيتل في منطقة السدود–السودان

A thesis submitted in fulfillment of the Requirements for the Degree of Master of Science in wildlife Science

By:

Samuel Buwaro Anthony

B.Sc Wildlife Science

Sinnar University (2004)
Supervisor:

1. Prof. Ali Saad Mohamed
   Department of Wildlife & Fisheries

2. Co-supervisor. Dr Haider Elamin Ahmed
   Department of Animal Production
   College of Science and Technology of Animal Production

February 2011

Dedication

To almighty lord Jesus Christ son of the living God

To all my family brothers- sisters and friends

And finally to my wife and children I deeply offer this work

Acknowledgement
I am especially grateful to my principal supervisor Professor Ali Saad Mohamed for his usually offering, support and good humor. Beside his commitment to this work by providing with scientific curiosity that made me understand how to bring research to a published product. I also gave sincere appreciation to my co-supervisor Dr. Haider Elamin Ahmed for his support to this study during time of study by encouraging and advising me to carry research properly to its end and to him I am very grateful. I offer my deepest thanks to my family for sticking by encouraging and supporting me continuously. I give especial thanks to my father and mother for their believe and encouragement to achieve this programme, as far as many thanks goes to my wife and children for their patience, support and good humor. This study would not have been possible without the full cooperation of laboratory analysis to sample of faecal pellet by phase contrast microscope, at microbiological lab in Khartoum university faculty of science. I especially would like to thank Dr. Nasik AbdullaHammed the head of laboratory for offering Phase contrast Microscope and helping in reading differences slides of plant fragment. I also gave many thanks to Mr. Mohamed Awed Balal the technical of laboratory for spending many hours helping in capturing photos of plants fragment seen during examination of slides of two seasons. As well as many thanks goes to Mr. Rashid Mie el den. For offering slides and taking care in requirements need for the work, Therefore I especially like to thank Dr. Omer the lecturer at collage of animal production of the Sudan university of science & technology for helping me in analysis of data collection by SPSS programmed.
Abstract

The Study was undertaken during dry season (Jan- April) and Wet season May-Sept) 2009 At the Sudd regions Mobior Gol in Jongeli South Sudan in three locations (Mara, Duk Padiet and Jeli) The study was conducted to determine the feeding habits of tiang (Damaliscus Korrigrum) from the plant Material in its habitats, and to investigate the feeding by examination of faecal pellets. Thirty one plant species were collected and identified, there was strong correlation between locations and seasons regarding the frequency of categories the location Mara showed the highest frequency 30 out of 77 followed by Duk Padiet 26, and Jeli 21 respectively. With percentage of 39% in Mara, 33.8% in Duk Padiet, and 27.3% in Jeli Mean difference of forbs were highly 6.5342±3.64418. Compared to grasses which were 4.3478±2.4319 forbs were highly significance compared to grasses and sedges. it was revealed that the forbs showed significance difference as compared to other categories (grasses- sedges)this donated either forbs were the most favored feed items for tiang sixty slides of plant fragment of dry season was preserved than examined the result identified epidermis characteristics of plant fragment and gave clearly view of epidermis cell pattern. Forty slides of plant fragment of wet season were preserved and examined the result identified unclear views of high constituents of herbs. Mean difference of Forbs in wet Season were as 48.50±9.56 Mean difference for forbs in dry Season were as 33.45±7.92 as well Mean difference for grass in Wet season were as 8.73±771. Mean difference of grass in dry season were as 11.77±5. A Questionnairewas constructed to reveal the familiarity of the public in the area around, about animal sp. Population in the study area was attributed Tiang was the most abundance species in the area, it has been seen with average of 100% followed by white eared cob 97% population of Tiang decreased to 80% during dry season that was attributed of huge hunting

The objectives of the study are to determine the plant species grazed by tiang and plant botanical composition. To investigate
into feeding habits of tiang in sudd area by examination of faecal pellets

ملخص

أجريت الدراسة في موسم في الجفاف (يناير - أبريل) وفترة الخريف (نوفمبر - مايو 2009) في منطقة السدود بميبر وولاية جونفلي، جنوب السودان. في ثلاث مواقع مختلفة مارا، دوك فاديت، جالي، دوك فاديت. أجريت الدراسة لمعرفة العادات الغذائية لطيبي النيل من المواد النباتية في اليابسة، وبحث عن نوعية الغذاء التي يتغذى عليها وذلك بتحليل روث التيتل. تم جمع وتصنيف وثلاتين نوع من اليبانات في فصلي الخريف والخريف، وشمل ذلك الحشائش، إعشاب، نباتات مثيرة. كان هناك ارتباط قوي بينهما في المناطق والفصليات. وحوض تكرار الأصناف.

الموقع مارا أدى على تكرار أعلى 30 من 77 جمل الموقع دوك فاديت 26, و جالي 21 على التوالي وكانت النسبة المئوية تتراوح ما بين (39.0 %) في منطقة مارا، (33.8 %) في منطقة دوك فاديت، و(27.3 %) في منطقة جالي. أظهرت الأعشاب أكثر قبولاً استجابة من الأصناف الأخرى (الحشائش والمثيرة). جمعت عينات من البراز لتغذية لكل فصل ووجفت.

وتم تحليل براز هذه العينات طبقاً لطريقة إيسفرك ومالما. تم فحص ستين شريحة من شرائح براز كل فصل، ووضعت النتائج خصائص البشرة النباتية بشكل واضح وأعطت وجهة نظرية ممتازة عن نمط البشرة. كما تم فحص براز من الأصناف لفصل الخريف وكانت النتيجة عدم وجود خصائص البشرة النباتية بسياقًا للبيانات الدقيقة في الإعشاب. المعلومات عن وجود الحيوان أظهرت أن النتائج أكثر أنواع الحيوانات تفتقر براز التيتل أدى إلى تغذية النسبية الإعشاب 50.48 ± 56.9 في فصل الخريف، بينما في فصل الخريف كانت 53.33 ± 92.7% من النسبية الحشائش كانت 73.8 ± 71.1%. في فصل الخريف، بينما في الخريف 43.5 ± 11.11.

المعلومات عن وجود الحيوان أظهرت أن التيتل أكثر أنواع الحيوانات مشاهدة في المنطقة من بقية الحيوانات الأخرى. وكانت نسبة مشاهدته من قبل السكان 100% بليبيا الإوزون الإزمن الأبيض بنسبة 97% انخفضت نسبة وجود التيتل في فصل الخريف إلى 80% وذلك بسبب الصيد المكثف. تهدف الدارسة إلى معرفة أنواع اليبانات التي يتغذي عليها التيتل.
في التركيبة النباتية وذلك عن طريق فحص روث الحيوان في منطقة السدود.

Table of Contents

<table>
<thead>
<tr>
<th>Topic</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dedication</td>
<td>I</td>
</tr>
<tr>
<td>Acknowledgment</td>
<td>ii</td>
</tr>
<tr>
<td>Abstract</td>
<td>iii</td>
</tr>
<tr>
<td>Arabic abstract</td>
<td>iv</td>
</tr>
<tr>
<td>Table of contents</td>
<td>V</td>
</tr>
<tr>
<td>List of tables</td>
<td>vii</td>
</tr>
<tr>
<td>List of Figures</td>
<td>ix</td>
</tr>
</tbody>
</table>

Chapter One

Introduction 1

Chapter Two

Literature Review

Tiang (DamaliscusKorrigrum) 4

Food and feeding Habits Techniques 6

Relevant studies on faecal collection 10

Plant Material collection 13

Chapter Three

Material and Method

Study area 18

Climate 18

Topography and Soil 18

Vegetation ecosystem 19

Animals existing 20

Data collection about animals and citizen in the study 20

Plant material collection and analysis 21

Faecal Pellet collection and analysis 21

Statistical analysis 22

Chapter Four

Result 23
## List of Figure

<table>
<thead>
<tr>
<th>No.</th>
<th>Table</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td>a mean percentage of sex was 89% male and 11% female</td>
<td>55</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>a mean percentage of professional jobs among community in the area</td>
<td>56</td>
</tr>
<tr>
<td>3.</td>
<td></td>
<td>a mean percentages of locations accommodated by citizen in the area</td>
<td>57</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td>a mean percentage of tiang seen 100% in the study area</td>
<td>58</td>
</tr>
<tr>
<td>5.</td>
<td></td>
<td>a mean percentage of white eared seen 97% in the study area</td>
<td>59</td>
</tr>
<tr>
<td>6.</td>
<td></td>
<td>a mean percentage of reedbuck seen 55% in the study area</td>
<td>60</td>
</tr>
<tr>
<td>7.</td>
<td></td>
<td>a mean percentage of Nile lechwe seen 57% in the study area</td>
<td>61</td>
</tr>
<tr>
<td>8.</td>
<td></td>
<td>a mean percentage of lion seen 84% in the study area</td>
<td>62</td>
</tr>
<tr>
<td>9.</td>
<td></td>
<td>a mean percentage of fox seen 3% in the study area</td>
<td>63</td>
</tr>
<tr>
<td>10.</td>
<td></td>
<td>a mean percentage of wild dog seen 5% in the study area</td>
<td>64</td>
</tr>
<tr>
<td>11.</td>
<td></td>
<td>a mean percentage of tiger seen 3% in the study area</td>
<td>65</td>
</tr>
<tr>
<td>12.</td>
<td></td>
<td>a mean percentage of hyena seen 15% in the study area</td>
<td>66</td>
</tr>
<tr>
<td>13.</td>
<td></td>
<td>a mean percentage of bongo seen 38% in the study area</td>
<td>67</td>
</tr>
<tr>
<td>14.</td>
<td></td>
<td>a mean percentage of crocodile seen 53% in the study area</td>
<td>68</td>
</tr>
<tr>
<td>15.</td>
<td></td>
<td>a mean percentage of snake seen 5% in the study area</td>
<td>69</td>
</tr>
<tr>
<td>16.</td>
<td></td>
<td>a mean percentage of Mongella seen 26% in the study area</td>
<td>70</td>
</tr>
<tr>
<td>17.</td>
<td></td>
<td>a mean percentage of leopard seen 1% in the study area</td>
<td>71</td>
</tr>
<tr>
<td>18.</td>
<td></td>
<td>a mean percentage of tiang acquainted by community 99% in Area</td>
<td>72</td>
</tr>
<tr>
<td>19.</td>
<td></td>
<td>a mean percentage of tiang focus 100% in the study area</td>
<td>73</td>
</tr>
<tr>
<td>20.</td>
<td></td>
<td>a mean percentage of population size of tiang high 82% and low 18% in</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21.</td>
<td>a mean percentage of grazing animals 71% in the study area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22.</td>
<td>a mean percentages of increasing and decreasing of tiang</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23.</td>
<td>Population20% increasing 80 % decreasing in area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24.</td>
<td>a mean percentages of population decreasing reasons of tiang 63%hunt 13% migration 12% war 7% poor grazer 5% diseases in the study area</td>
<td></td>
<td></td>
</tr>
<tr>
<td>25.</td>
<td>a mean percentage of hunting purpose 99% meat for food 1% meat for sell, in the study area</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>