

## Table of contents

<b>ABBREVIATIONS.....</b>	<b>x</b>
<b>1. INTRODUCTION.....</b>	<b>1</b>
<b>2. OBJECTIVES.....</b>	<b>3</b>
<b>3. LITERATURE REVIEW.....</b>	<b>4</b>
3.1 The economic impact of African animal trypanosomosis and its control.....	4
3.2 The epidemiology of African animal trypanosomosis.....	5
3.2.1 Pathogen.....	5
3.2.2 Vector.....	6
3.2.3 Host.....	7
3.2.4 Environment.....	7
3.3 Drug treatment.....	8
3.4 Drug resistance.....	9
3.4.1 Impact of drug resistance.....	11
3.4.2 Detection of drug resistance.....	11
3.4.3 Trypanocidal drug-ELISA .....	13
3.4.4 Molecular tests for the detection of drug resistance.....	13
3.4.5 Delaying the development of drug resistance.....	14
3.4.6 Containment of drug resistance.....	15
3.5 Tsetse and trypanosomosis control activities on the Adamaoua plateau.....	16
3.5.1 Aerial spraying of insecticides.....	17
3.5.2 Reinvasion of sprayed areas and tsetse dispersion.....	19
3.5.3 Insecticide treatments of cattle.....	22
3.5.4 Screens and traps as barriers.....	26
3.5.5 Program of insecticide treatments of cattle in the buffer zone.....	27

3.5.6 Trypanocidal treatments of cattle on the Adamaua plateau.....	28
3.5.7 Organisations involved in tsetse and trypanosomosis control in the Adamaua.....	29
<b>4. MATERIALS AND METHODS.....</b>	<b>31</b>
4.1 Study area.....	31
4.2 Sentinel herds.....	33
4.3 Tsetse monitoring around sentinel herds.....	34
4.4 Parasitological techniques.....	35
4.5 ELISA for detection antitypanosomal antibodies.....	36
4.6 Traps-transects and tsetse monitoring in the valley.....	37
4.7 Fly round along transects in the valley.....	38
4.8 Isometamidium-block treatment study at Kontcha village .....	39
4.9 Drug sensitivity studies in mice of trypanosome isolates from Kontcha village.....	41
4.10 Drug sensitivity studies in mice of trypanosome isolates from the valley and buffer zone.....	41
4.11 Statistical analysis.....	42
<b>5. RESULTS.....</b>	<b>44</b>
5.1 Trypanosomosis prevalence and incidence in sentinel cattle .....	44
5.2 Tsetse monitoring around sentinel cattle.....	45
5.3 Sero-conversion during transhumance.....	46
5.4 Apparent Abundance of tsetse along trap-transects.....	46
5.5 Apparent Abundance of tsetse along fly-round-transects.....	47
5.6 Isometamidium-block treatment at Kontcha village.....	48
5.7 Drug-sensitivity of trypanosome isolates from Kontcha village in mice.....	53
5.8 Drug sensitivity studies in mice of the trypanosome isolates collected from the valley and buffer zone.....	53

<b>6. DISCUSSION.....</b>	<b>55</b>
6.1    Prevalence and incidence of bovine trypanosomosis .....	55
6.2    Tsetse distribution in Faro and Deo division.....	56
6.3    Chemoresistance.....	57
6.3.1    Field trials to detect drug resistance.....	57
6.3.2    Prevalence of drug resistance in Adamaua.....	58
<b>7. CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>60</b>
<b>8. SUMMARY.....</b>	<b>62</b>
<b>9. ZUSAMMENFASSUNG.....</b>	<b>64</b>
<b>10. RESUME.....</b>	<b>66</b>
<b>11. REFERENCES.....</b>	<b>68</b>
<b>12. ANNEXES.....</b>	<b>85</b>
<b>ACKNOWLEDGEMENTS.....</b>	<b>96</b>
<b>CURRICULUM VITAE.....</b>	<b>98</b>
<b>SELBSTÄNDIGKEITSERKLÄRUNG.....</b>	<b>100</b>