The spatial distribution of bovine trypanosomosis in tsetse-infested areas of Sudan: past & present

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Introduction

• African animal trypanosomosis (AAT) is present in Sudan both in the tsetse-infested areas and beyond, where it is transmitted by other biting flies.

• Over decades, information on trypanosomosis and its vectors has been collected in Sudan.

• However, harmonized geo-referenced data at the national level are lacking.

• This information is necessary to plan and implement field interventions.
The Atlas of AAT and its vectors in Sudan

• Background
  – in 2011 the Government of Sudan launched the project “Control of trypanosomosis & tsetse fly in Sudan”
  – the project includes a mapping component for AAT and its vectors
  – the Atlas is an initiative of the Veterinary Research Institute (VRI) of Sudan
  – the Atlas is technically supported by the FAO, in the framework of the Programme against African Trypanosomosis (PAAT)

• Objectives
  – to build a national geo-referenced database of AAT and its vectors in Sudan
  – to inform appropriate design of control and monitoring strategies against trypanosomosis
• This presentation focuses on three states (Blue Nile, South Kordofan and South Darfour), the only tsetse-infested states in Sudan.
Methodology

• Based on that developed by FAO for the Atlas of tsetse and AAT
• Data sources
  – scientific papers
  – MSc and PhD thesis
  – government reports
• Hosts: bovines
• All data collected from 1960 onwards were included
• Also, targeted field surveys were conducted in 2011-2013 to complete and update information in the Blue Nile state (trypanosomes species) and South Darfur (tsetse fly distribution)
Results: data sources

• Data sources identified and processed
  – scientific publications: 20
  – PhD theses: 4
  – MSc theses: 5
  – Reports: 8
  – Personal communications: 3
  – TOTAL: 40
Tsetse in the surveyed states

- *Glossina morsitans submorsitans* in South Darfur state, Radom locality
• *G. m. submorsitans* & *G. fuscipes fuscipes* in Khor Yabus council, Blue Nile state
- *G. m. submorsitans* in Koalib Hills, Nuba Mountains, South Kordofan state (eradicated area)
AAT in Sudan
AAT prevalence rates in Sudan

Developing maps of tsetse and AAT for Sudan
AAT prevalence rate in the surveyed states
Conclusions

• The Atlas of AAT and its vectors in Sudan informed decisions on where to target pilot tsetse-control activities (pour-on and traps).
• We started the control programme in high priority areas according to the results of the Atlas.
• The Atlas also includes other biting-flies (not presented here).
• The Atlas will be extended to other livestock species (i.e. small ruminants and camels).
Further analysis is needed to explore the environmental correlates of AAT occurrence, especially in areas of mechanical transmission.
Thanks for your attention