37th INTERNATIONAL SCIENTIFIC COUNCIL FOR TRYPANOSOMIASIS RESEARCH AND CONTROL (ISCTRC), Conference in Nairobi , Kenya, 15th-19th September 2025 ‘

Theme: Harnessing One Health Technologies & Innovations towards Eliminating Trypanosomiasis in Africa

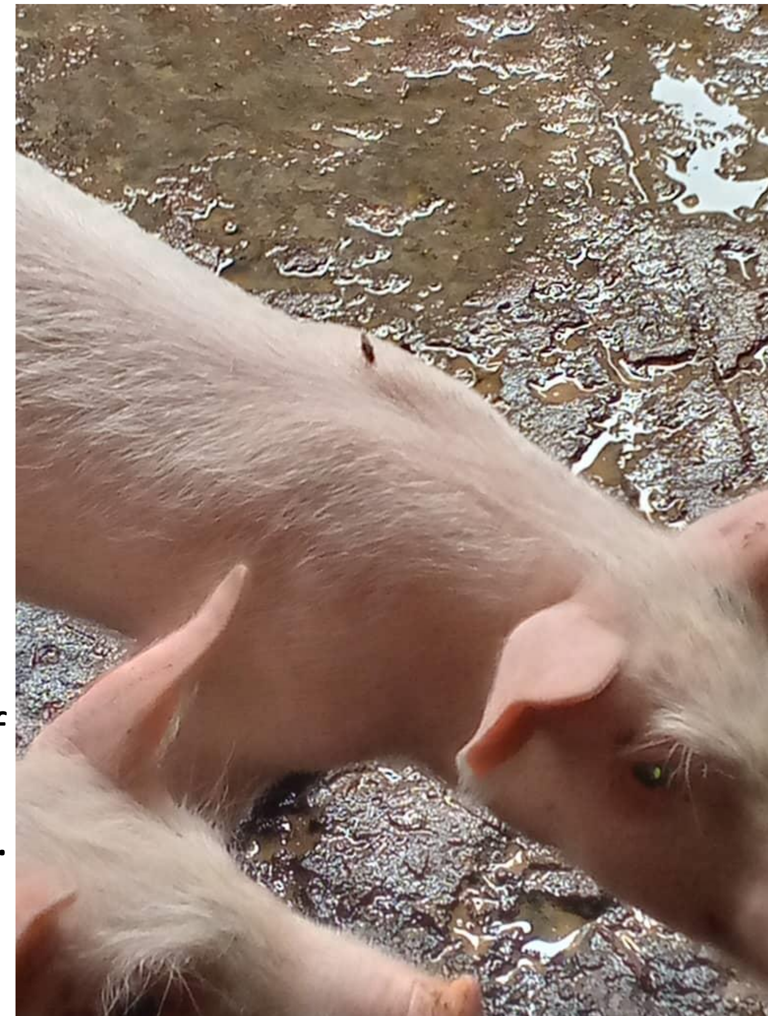
Transboundary surveillance of Human African Trypanosomiasis by Immunotrypanolysis between Democratic Republic of the Congo and Uganda

Prof. PYANA PATI P. (Dept. of Zoonoses & One Health/INRB)

Situation of Animal reservoir of *T.b.gambiense* in DR. Congo

- *Glossina spp*:
  - Identification of this trypanosome subspecies in the mid-guts of glossina at Kimpese (Kongo-Central), none infective (2012)
- Mammals:
  - Detection of *T.b.gambiense* antibodies in pig, dog and bovine sera using immuno-trypanolyse although none efficience by sole trypanolysis (Kongo-Central, 2022)
- Possible presence of animal reservoir where located HAT
- However, the precise epidemiological role of the animal reservoir for *T. gambiense* trypanosomiasis remains poorly understood.

Blood meal of a tse-tse fly (Kinshasa)



Situation of HAT in DR. Congo

- WHO aims to further strengthen activities to achieve the elimination of human African trypanosomiasis as public health problem by 2030
- The prevalence of HAT is steadily decreasing according to the annual report (2022) of PNLTHA.
- Reference: NSSCP of DRC
  - Total Population Examined (TPE):
  - Positive serological “CATT/ICT”:
  - New HAT cases:
- Prevalence in Kinshasa and Kongo Central
  - TPE:
  - NC:

Mokeli
Malepe
Naombia
Sindani
Ndeko
Butembo
Bwino
Busese
Bohano
Milinde
Musienene
Kihoma
N 2
Mbolu
Bulambo
Balonge
Lubero
Kabiro
Congo
Alimbongo
Lgalika
Bingi
N 2
Kisenga
Rugetsi
Kyalema
A 109
Kasese
Ruwenzori
Kasindi
Bwera
A 109
Lake George
Isango-Isoro
Ndeke
Lac Édouard
Uganda

gettyimages
Credit: AFP

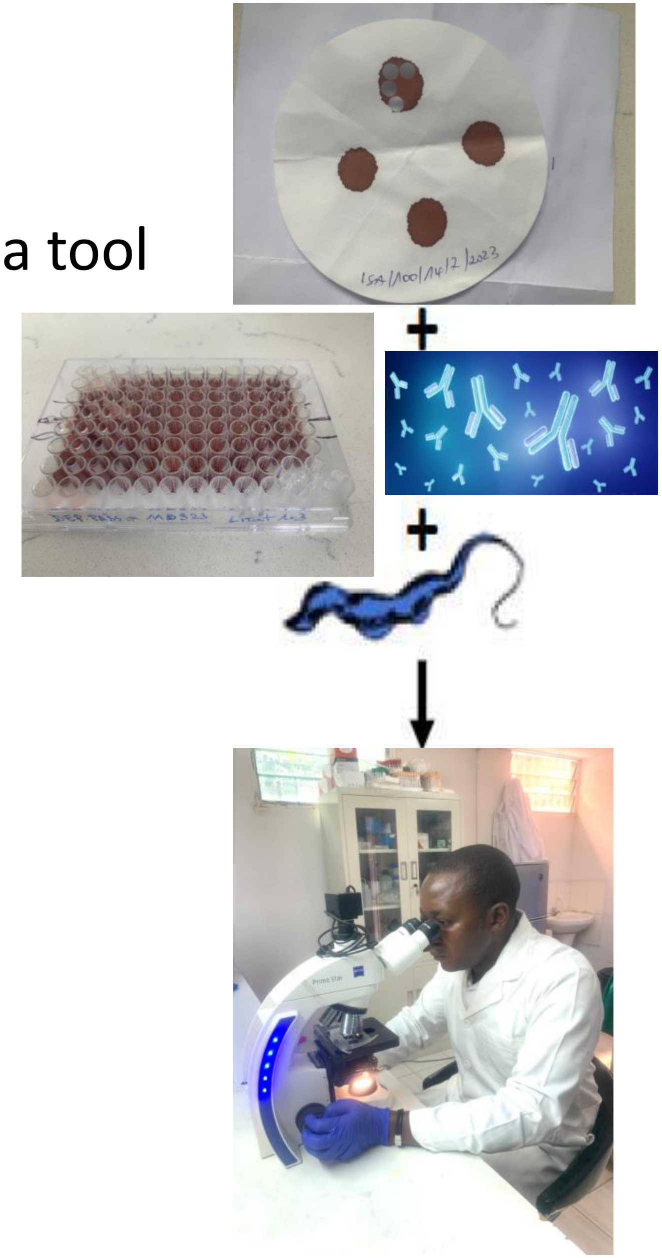
Diagnostic

- Unfortunately, the outils of diagnostic have limited specificity and sensibility to detect:


  - All new person with *T.b.gambiense* antibodies {CATT and immunochromatographic or lateral flow test)} and
  - New case if antibodies are not reach the level to protect (Trypanolysis)
- Observation: Human remain the potential reservoir of *T.b.gambiense* and tsetse fly can influence transmission in mammals others trypanozoon

Diagnostic

- The immuno-trypanolysis test could be a tool of choice given its high specificity and sensitivity compared to the previous ones (specificity 100% and sensitivity 94-100%)
  - LiTat 1.3
  - Litat 1.5
- Serum vs filter paper:
  - (serum is better compared to DBS)



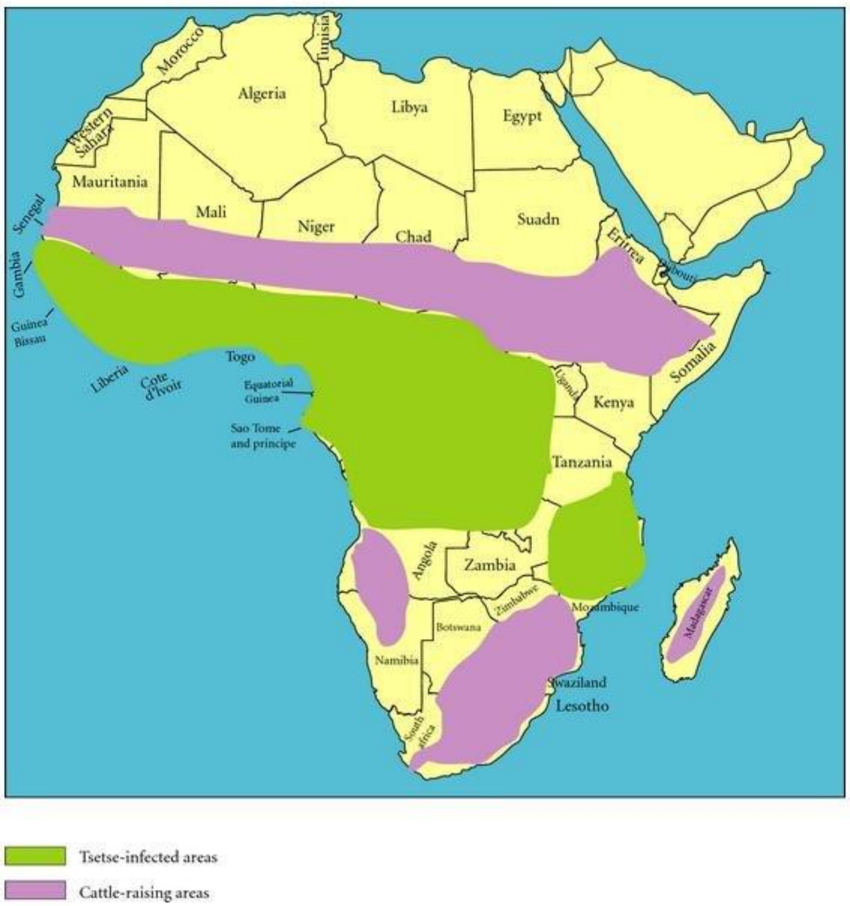
Sites (1) of study

- None endemic area with any HAT case reported between Butembo (DRC) and Kasese (Uganda) (Period Nov 2024 – Feb 2025

Sites (2) of study

- endemic area of HAT cases reported by NCSSP (PNLTHA)

Sampling at abattoir of the commune of Masina (Kinshasa).



Objectifs

1. Investigate a possible circulation of LiTat 1.3; LiTat 1.5 antigens and SRA in none endemic areas of HAT;
2. Investigate on potential interaction between subgenus *Trypanozoon* transmission cycles in man and animals
3. Characterize a positive samples on serological assays using specific primers like TgSGP(Tg19);SRA, ITS; M18 and TBR.

- Make an Atlas

Material and Method (1):

- Collection of 103 whole blood from human vs 260 Sera and 260 DBS from same animals: (520 samples)
  - None-endemic area (DRC): Human
  - Provenance of cattle in Uganda: unknow statut

Material and method (1): samples collected

- Sampling on sarstedt tubes 2ml,needles, vacutainers tubes, whatman 4 DBS etc….
- Forms, coolers and accumulators
- Kasese (Uganda) via Butembo (DRC), Lubero (DRC).

Sampling sites (ZS/Health Center)

- **Human:**
  - ZS Lubero: 103 (abattoir, cattle keepers)
- **Cattles**
  - ZS Butembo: 260 sera and 260 DBS from same animals (Animals from Kasese District in Uganda)

Area/n°Samples (none endemic)	Human (103 whole blood)	Bovines (260 sera)	Bovine (260 DBS)	Total
Butembo	0	260	260	520
Lubero	103	0	0	103
Total samples				623

Material and method (2): samples collected

- Sampling on sarstedt tubes 2ml,needles, vacutainers tubes, whatman 4 DBS etc.
- Beni (North Kivu, DRC) Abattoir of Beni
- South of CHAD via CAR and North of Angola , KINSHASA (DRC).

Cattles sampling sites (Abattoir of Beni & Masina at Kinshasa) June & July 2025

- **Beni : 194 Sera**
- **From Chad:** 56 Sera
- From Angola: 10 Sera

Area/n°Samples	**Bovines (sera)**
Beni (DRC)	194
Masina (Chad)	56
Masina (Angola)	10

Results (1) Preliminary

N° Sample	CATT	Abbott	Coris
Human whole blood (103)	2 (1,9%)	2 (1,9%)	2 (1,9%)
TL on positive serological samples (n=6)	Negative	Negative	Negative

N° Samples: 520 from Kasese Bovine		
Immunotrypanolyse (TL)	**Sera (n=260)**	**DBS (n=260)**
Positive	6 (2,3%)	6 (2,3%)

12 TL positives samples with different individus (6 DBS and 6 sera): Among 6 positives sera samples, **1 revealed positive to CATT, Abbott and Coris** while all 6 positive DBS at TL are negatives to CATT, Abbott and Coris
Running ITS PCR :Neg

Bovine	CATT	Abbott	Coris
Sera positive	6 (100%)	4 (66,6%)	3 (50%)
DBS positive	0	0	0

Results (2) Preliminary

N° Sample	CATT	Coris
Cattles Beni DRC (194)	182 (93,8%)	135 (69,5%)
TL on positive serological samples	Negative	Negative

N° Sample	CATT	Coris
Cattles Chad (56)	44 (78,6%)	26 (46,4%)
TL on positive serological samples	Negative	Negative

N° Sample	CATT	Coris
Cattles Angola (10)	8 (80%)	4 (40%)
TL on positive serological samples	Negative	Negative

Conclusions and perspectives

- The antigen LiTat 1.3 and LiTat 1.5 from trypanozoon and nanomonas seems spread in none endemic HAT regions ;
- Characterize a positive samples on serological assays using specific primers like TgSGP(Tg19);SRA, ITS; M18 and TBR to confirm the presence of antigens on mammals;
- Initiate transboundary surveillance between DRC, Uganda, CAR, South Sudan and Angola;
- Initiate and encourage community mobilization to participate on mass screening and collect blood from cattle keepers in Butembo during the survey to compare with those of Lubero;
- Actualize an Atlas/MAP of African trypanosomes that circulate in North – East of DRC;
- Xenodiagnostic can be encouraged

Aksante sana

AFRICAN UNION
INTERAFRICAN BUREAU FOR ANIMAL RESOURCES

Institut National de Recherche Biomédicale
INRB
Laboratoire National de Santé Publique

PROGRAMME NATIONAL DE LUTTE CONTRE LA THA
PNLTHA-RDC

DNDi
Drugs for Neglected Diseases *initiative*
Initiative Médicaments contre les Maladies Négligées

INSTITUTE OF TROPICAL MEDICINE ANTWERP

PLATEFORME REGIONALE DE RECHERCHE CLINIQUE
TRYPANOSOMIASE HUMAINE AFRICAINE
HUMAN AFRICAN TRYPANOSOMIASIS
HAT REGIONAL PLATFORM FOR CLINICAL RESEARCH THA

EANETT
EASTERN AFRICA NETWORK FOR TRYPANOSOMOSIS

FIND
Because diagnosis matters