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Pleuropneumonia

Reference Centre



World Organisation
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Founded as OIE

THE POTENTIAL CONTRIBUTION OF CBPP INTERNATIONAL REFERENCE LABORATORIES

***L. Manso-Silvan , A.Bothelo, C. Bodjo, L. Keokilwe & M. Scacchia
Second meeting of SGE on CBPP of the GF-TADs for Africa
Lusaka, Zambia, 23-25 July 2024***

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CBPP WOAHA Reference Labs

**Botswana National Veterinary Laboratory (BNVL)-
BOTSWANA**

**Centre international en recherche agronomique pour
le développement (CIRAD)-FRANCE**

**Instituto Nacional de Investigação Agrária e
Veterinária (INIAV) -PORTUGAL**

**Istituto Zooprofilattico Sperimentale Teramo (IZSTE)-
ITALY**



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WOAH Collaborating Centre

African Union Pan-African Veterinary Vaccine Centre - Ethiopia WOAHC CC for Quality control of veterinary vaccines



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NETWORKING

***CBPP WOAHL INIAV
Networking***

**SOPs provided online on the web
site**

***CBPP WOAHL BNVL AND IZSTE
ERFAN Network***

**15 SOPs provided online on the
ERFAN web site**

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CAPACITY BUILDING

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Online
workshop, with
the support of
FAO, for
interested
African or other
countries

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CBPP WOAHL RL INIAV Training

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RL FAO
Webinar

 REPÚBLICA
PORTUGUESA
AGRICULTURA
E ALIMENTAÇÃO

 Instituto Nacional de
Investigação Agrária e
Veterinária, I.P.

Serological diagnosis of CBPP:
background, interpretation
and troubleshooting



28th October 2022

Ana Botelho & Ana Cristina Ferreira
ana.botelho@iniav.pt cristina.ferreira@iniav.pt

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CBPP WOAH RL BNVL Training

Strengthening Capacity for Diagnosis of CBPP in Kenya

Fortifying Institutional Resilience against Biological Threats Project - WOAH

Culture and Isolation, CFT, PCR - Training of Trainers

- 5 to 9 February 2024 , 3 people at BNVL
- 4 to 15 March 2024, 15 people in Kenya

On bench training for CBPP diagnostic tests for Eswatini

05 February to 01 March 2024, 1 colleague at
BNVL



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CBPP WOAHL RL CIRAD

Training

Lab training CBPP/CCPP diagnostics



Practical training at CIRAD, France, June 2018.

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CBPP WOAHA RL IZSTE Training

National Veterinary Laboratory Paraguay



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Training

***ERFAN Training course on: CBPP CFT Antigen
production, BNVL, Gaborone-Botswana, 6-9 June***

ERFAN Online Dialogues: "CBPP Ford" 2023

ERFAN Online Dialogues:

"CBPP, health threat to North Africa?"

***ERFAN WEBSITE: Online Training course and
videos sharing***

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STANDARDIZATION DIAGNOSTIC METHODS

CBPP WOAHL RL BNVL ***Provision of reagents***

- Positive and Negative Reference Sera
- Antigen for CFT
- PCR reagents

Development and validation of diagnostic assays

CBPP WOAHA RL CIRAD

- Competitive ELISA (cELISA): Developed by CIRAD. *Transferred to the private sector: Commercial kit (IDEXX > IDvet)*

IDEXX kit discontinued! > *Transferred to Idvet, now commercially available*



Under validation for ISO 17025 accreditation at CIRAD
Ring trial ongoing

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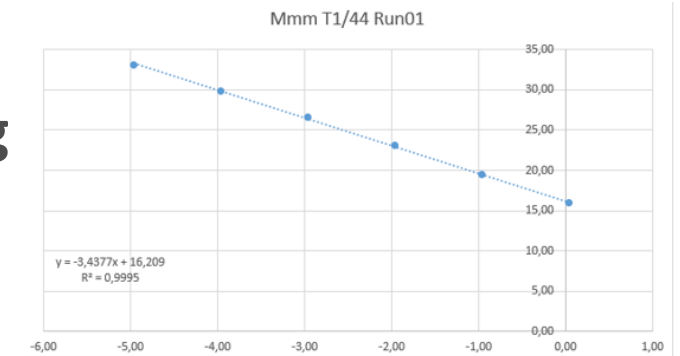
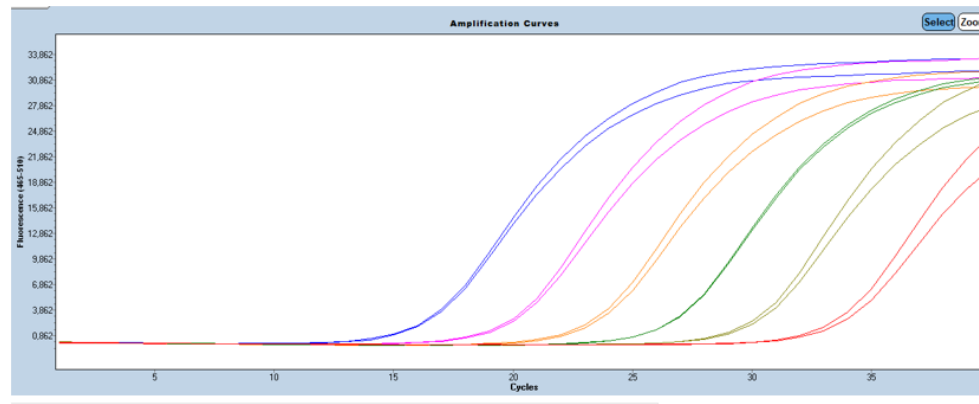
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CBPP WOAHL RL BNVL Ring trial organisation 2023

CFT: 5 participants

CBPP WOAHA RL CIRAD New RT PCR development

➤ Specific TaqMan-based RT PCR, following DNA extraction directly from suspected samples



Under validation for ISO 17025 accreditation

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RESEARCH AND PROJECTS

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PRAPS

Project

REGIONAL SAHEL PASTORALISM SUPPORT PROJECT

Definition of adoption of seromonitoring protocols for the evaluation of national vaccination campaigns against CBPP

Control of T1 vaccines by titration

Monitoring of antimicrobial sensitivity of *Mmm* field strains by MIC determination



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CBPP pathology Score system

CBPP WOAH RL IZSTE
Research



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CBPP WOAHL RL BNVL
ERFAN Research

ERFAN Master on *Mmm* and AMR

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CBPP WOAHL RL BNVL Research Project Proposal

**“Diagnostic, treatment and
control strategies for Contagious
Bovine Pleuropneumonia in
SADC Region”**

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CBPP CONTROL STRATEGY: SUPPORT FOR GLOBAL SURVEILLANCE

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WOAH Twinning Project



CBPP WOAH RL IZSTE

4 completed

★ IZS.IT 3 new WOAH RL

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WOAH Twinning project on CBPP Presented to WOAHL for founding



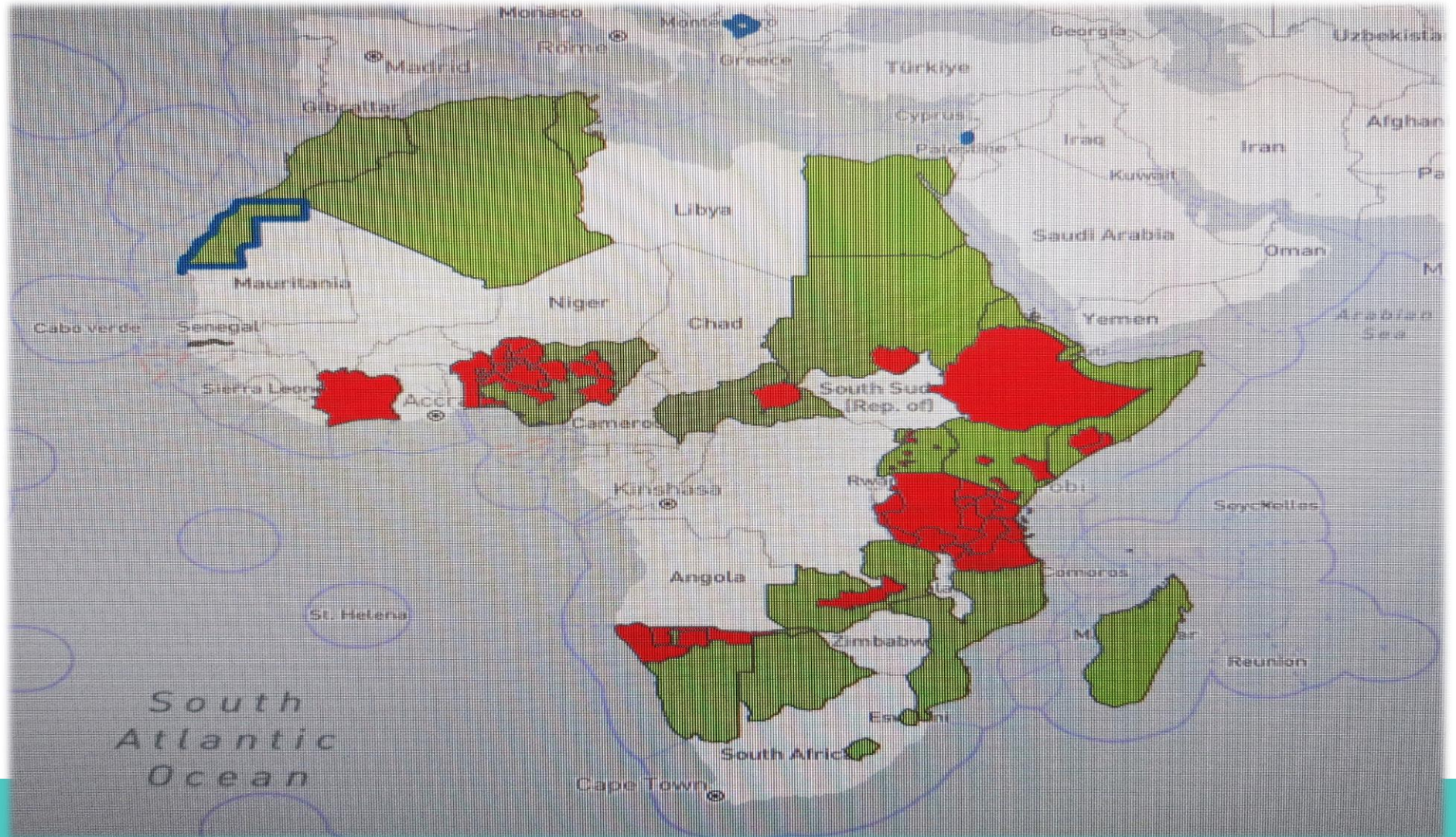
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Infection Foci detection



Infection Foci detection

AU-IBAR emphasises CBPP control policy concerning active surveillance and information gathering for the early detection of CBPP foci of infection

Infection Foci detection

How to identify foci of CBPP infection in some African countries due to economic issues, personnel shortages and political-military instability?

Infection Foci detection

How to identify foci of CBPP infection in African pastoral communities that often live in areas that are difficult to reach?

And with intense animal movements, related to transhumance and pastoralism?

Infection Foci detection

- Often they live at the borders of several nations
- In some cases in areas characterized by political and /or military instability

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Implement early detection of CBPP foci and their notification to International Organisations



Implement early detection of CBPP foci and their notification to I.O.

“Suspicion of CBPP related to pathological lesions”

as result of suspected lesions found in the field and/or at the abattoir and confirmed, studying, in remote, photos of pathological lesions, by WOA/FAO (but not only) CBPP experts, involving VS

Implement early detection of CBPP foci and their notification to I.O.

- Abattoir surveillance
- Field surveillance (*post-mortem* examination and/or slaughtering related to traditional ceremonies)

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Implement early detection of CBPP foci and their notification to I.O.

Identification of infection foci involving State and private veterinarians, Animal Health technicians and Meat Inspectors

Implement early detection of CBPP foci and their notification to I.O.

In instability areas

Identification of infection foci could involve also **trained** traditional leaders, breeders and eventually NGOs personnel, under VS remote control

Implement early detection of CBPP foci and their notification to I.O.

Considering these “new actors”
CBPP abattoir and field surveillance,
necessarily need, new approaches such as
Telediagnosis-Remote assistance
supported by WOA/FAO (but not only)
CBPP Expert, involving VS

Telediagnosis-Remote assistance

Mobile App

[View all](#)

Latest Articles

Marek's disease

11/06/2024, 10:10

 Chicken  Marek's disease

Introduction Marek's disease is a highly contagious viral disease primarily affecting chickens, characterized by the formation of tumors and paralysis. The causative agent, Gallid alphaherpesvirus...

Foot rot in sheep

11/06/2024, 10:10

 Sheep  Foot rot

Introduction Foot rot is a highly contagious bacterial infection affecting the hooves of sheep, leading to lameness, significant discomfort, and economic losses in the sheep...

Latest Cases

[View all](#)

Request veterinary consultation

19/06/2024, 15:04

 Sheep

.Dear veterinary experts.A herd of sheep numbering 100 heads.The injured 25 heads.Skin symptoms that start small and expand, and the skin becomes hard and thick.I...

The milk curdles

19/06/2024, 12:31

 Goat

Dear Veterinary ExpertsGreetingsI would like to consult you on a medical caseA goat has a normal temperature and appetite, the color of the milk is...

My fellow doctors, male and female veterinarians, I would like to obtain your professional and field expertise in the case of persistent estrus in a...

Seeking advice about a case of an acute diarrhea in a young calf


18/06/2024, 10:46

 Cattle

Dear veterinary experts, I am asking about the possibility of controlling a case of severe diarrhea in a three-month-old calf. The diarrhea is yellow

Request veterinary advice about a complex case

17/06/2024, 17:04

 Sheep


Hello, my fellow doctors, male and female veterinarians. I am asking for your help in a case that affects young sheep between the ages of...

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 Terms and conditions

 **Scacchia Massimo**
m.scacchia@izs.it



Request veterinary consultation



19/06/2024, 15:04



Original

English

Italian

Arabic

.Dear veterinary experts
 .A herd of sheep numbering 100 heads
 .The injured 25 heads
 .Skin symptoms that start small and expand, and the skin becomes hard and thick
 .I have injected her several times with ivermectin as well as infusions with external fluids
But it's no use

Type

Farm Visit

Farm Owner



Address



Visit date

2024-06-01

Visit number



19/06/2024, 15:08



Status

Closed



Original English Italian Arabic

Please Help



أفات جلدية (1)

80 KB



أفات جلدية (3)

73 KB

Telediagnosis-Remote assistance Mobile App



Scacchia Massimo

m.scacchia@izs.it

+ Comment

SM

Scacchia Massimo 20/06/2024, 14:18



Original English Italian Arabic

Dear friend, I think it is Dermatophilosis caused by *Dermatophilus congolensis*.

Dermatophilosis is initially characterised by the presence of small corneous swellings on the epidermis, which, with the time, evolve into more or less confluent crusty formations consisting of epithelial cells and exudate that conglutinates the wool. Such crusts, often tenaciously

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Telediagnosis- Remote assistance

Telediagnosis-Remote assistance: Photos and additional standardized information have to be send from the field and abattoirs to experts, via Mobile App, for quick feedback
Veterinary Services have to be activated

Telediagnosis- Remote assistance

This approach will require online/onside training on the disease and how to collect standardised:

- Farm epidemiological data;
- Clinical symptoms;
- Pathological lesions;
- Organs photos, using mobile phone.

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Telediagnosis- Remote assistance

Characteristic CBPP lesions and differential diagnosis **Photos collection**, will be provide
via **Mobile App**
to all the actors involved in this activity

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Photos collection



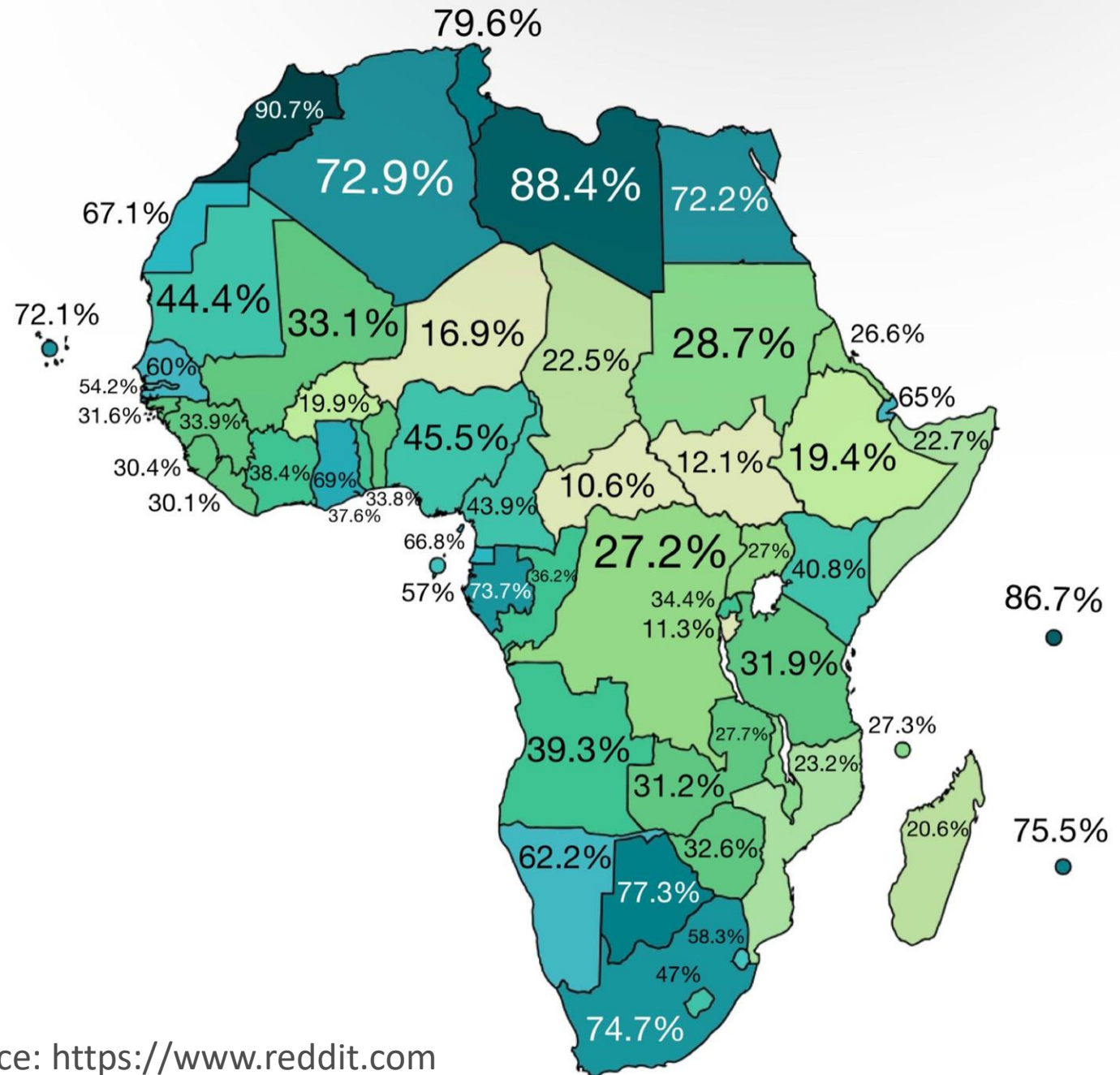
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Internet access in Africa March 2024



Source: <https://www.reddit.com>

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Abattoirs as epidemiological monitors in the African context



Abattoirs as epidemiological monitors in the African context

Abattoirs, useful to determine the magnitude of the disease, but can also assist with:

1. Trace back to the farm
2. Measures the Economic loss due to the condemnation of organs and the carcass weight reduction
3. Determine seasonal occurrence of CBPP

Source: Garoma Desse, *AHI, Ethiopia*

Abattoirs as epidemiological monitors in the African context

Abattoirs, useful for:

4. Determining the association of exposures and outcome (highest CBPP prevalence in cattle with a poor body conditions)
5. CBPP lesions monitoring supported also by WOA/FAO CBPP Expert, but not only, involving VS, using **Telediagnosis-Remote Assistance**

Source: Garoma Desse, *AHI, Ethiopia*

Infection Foci and Antibiotics



Antibiotics

Antibiotic treatments, given the problems related to **residues in meat and milk and AMR**, have to be carried out under the direct control of Veterinarians or Animal Health Technicians or, using a new approach, under the control of traditional leaders or farmers leaders **properly trained by VS**



Antibiotics and CBPP: Tanzanian experience

*The results from the 400 interviews show that **Tylosin** is the most commonly used antibiotic by 286 (84.87%), followed by **Oxytetracycline** 47 (14.39%) and **Enrofloxacin** 3 (0.89%)*

346 (86.50%) knows about CBPP, while 41 (10.25%) never sought professional advice, and 347 (86.75%) used antibiotics to treat CBPP

Antibiotics and CBPP: Tanzanian experience

122 (34%) of cattle keepers practice self-treatment to cattle, 77(20.98%) do not complete the dosage, and 103 (28.06%) do not follow the withdrawal period

Cattle keepers 261 (65.74%) do not know about AMR

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**According PVS,
use of antibiotics
is OUT OF
VETERINARY
CONTROL in a
large number of
African
countries!!!!**



Source: Emile Singano, *TVLA-Tanzania*

Animal identification

Animal movement control, related, to **animal identification** should be aimed at achieving specific epidemiological objectives within a feasible national plan, *see Zambia*

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Thank you!

Our dream: a World without CBPP



Infection Foci and Surrounding Vaccination

In countries where it is not possible, for a number of reasons, to implement and sustain vaccination campaigns throughout the country

Surrounding vaccination of infection foci identified could be a possible disease containment strategy

Vaccination

A regular effective and efficient program of mass vaccination or selective vaccination will have a significant impact on morbidity and mortality losses resulting in economic benefit to livestock farmers but does not lead to eradication of the disease.

Vaccination

Currently due to economic issues, personnel shortages, political-military instability, **annual mass vaccination programs** are unsustainable in many African countries.

This has led to perpetuation of the disease.

Vaccination strategies should be aimed at achieving specific epidemiological objectives within an achievable national plan

Vaccination and Antibiotics

Combined vaccination and drug treatment programs could offer greater impact than either approach alone. In a primary outbreak of CBPP, under veterinary control, the judicious and strategic use of antibiotics and subsequent vaccination, associated with the surrounding vaccination of neighbouring farms, could be a valid approach

Antibiotics

Antibiotic treatments have so far shown through experiments that they can reduce the transmission of CBPP reducing number of infecting animals, mortality and production losses caused by CBPP infection, but does not lead to cure of the disease.