

# CONTAGIOUS BOVINE PLEURO- PNEUMONIA

steps towards control of the  
disease

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# Introduction

- CBPP is a highly contagious acute, subacute or chronic disease of cattle and water buffalo caused by *Mycoplasma mycoides mycoides* small Colony (*MmmSC*).
- It is characterised by fibrinous interstitial pneumonia, pericarditis and pleurisy, up to 100% morbidity and up to 50% mortality.
- *MmmSC*, lacks a cell wall and is highly pleomorphic (spherical, pear-shaped, filamentous)
- Requires special media rich in cholesterol for growth.
- Fragile and survives poorly outside the host
- . It is sensitive to desiccation and disinfectants

# Disease transmission

- Transmitted almost exclusively by direct contact between infected and susceptible cattle
- Cattle are herded closely together or crowding of cattle favour rapid spread of the disease.
- Asymptomatically and chronically infected animals are very important in the spread of the disease to new areas.
- Chronic carriers often referred to as lungers ( healthy looking ) animals that have a localized focus of infection sequestered in a fibrous capsule in their lungs.

# History of CBPP in Kenya

- CBPP outbreaks in Kenya date as far back as 1907
- In 1970s and 1980s the disease seemed to have been under control being confined only to the North parts of the country.
- Re-emergence 1990s in areas previously believed to have been free of the disease has threatened the livelihood of the pastoralists .
- For the purposes of controlling the disease the country has been zoned and rezoned over the years to include any new knowledge of out break of the disease

# CBPP control

## ❖ **Control strategies**

- ◆ vaccination
- ◆ test and slaughter
- ◆ movement control and quarantine
- ◆ surveillance and reporting
  - ✦ field surveillance
  - ✦ abattoir surveillance
  - ✦ laboratory diagnosis

# CBPP Control

- The national policy with respect to CBPP is “control and eventual eradication in collaboration with neighbours”
- **CBPP clean zone:** maintain it clean while applying for freedom from disease to the OIE.
- **Surveillance area:** surrounds the infected zone- determined by natural barriers, animal movement patterns; continuous surveillance and movement from here to clean area must be by special permit
- **CBPP infected zone:** intensive vaccinations (biannual) and surveillance

# CBPP COTROL

## ❖ Control strategies

## ❖ Method to be applied is dependent on the zone

- ◆ vaccination
- ◆ test and slaughter
- ◆ movement control and quarantine
- ◆ surveillance and reporting
  - ✦ field surveillance
  - ✦ abattoir surveillance
  - ✦ laboratory diagnosis

# CBPP Zonation 2010

## Considers

- ❖ Pattern of disease outbreaks
- ❖ Situation of disease in neighboring countries
- ❖ Surveillance
  - Abattoir
  - Field
- ❖ Recommendations from
  - Workshops
  - Studies
  - Consultancies

# CBPP field diagnosis

- Field diagnosis: occurrence of respiratory disease in a number of cattle in a herd where there is acute or chronic coughing, dyspnoea and loss of weight is highly suspicious of CBPP.
- respiratory signs include fast, difficult and noisy breathing; discharge from the nose and coughing, especially after exercise.
- a yellow fluid in the chest cavity; lungs covered with yellowish material ; lungs adhered to the chest wall; lungs that do not collapse and are solid, hepatized or marbled or sequestra are all indicative of CBPP

# CBPP lab diagnosis

- definitive diagnosis is based on isolation and identification of the causative agent and/or the finding of specific antigens or antibodies by appropriate serological tests.
- CBPP may be confused with haemorrhagic septicaemia, East coast fever, bronchopneumonia resulting from bacterial or viral infections, acute pasteurellosis, bovine tuberculosis, actinobacillosis, traumatic pericarditis, abscesses, or hydatid cysts.
- Samples for diagnosis of CBPP must be collected and transported in appropriate temperatures to reach the lab the soonest possible

# CBPP Approved Labs in Kenya

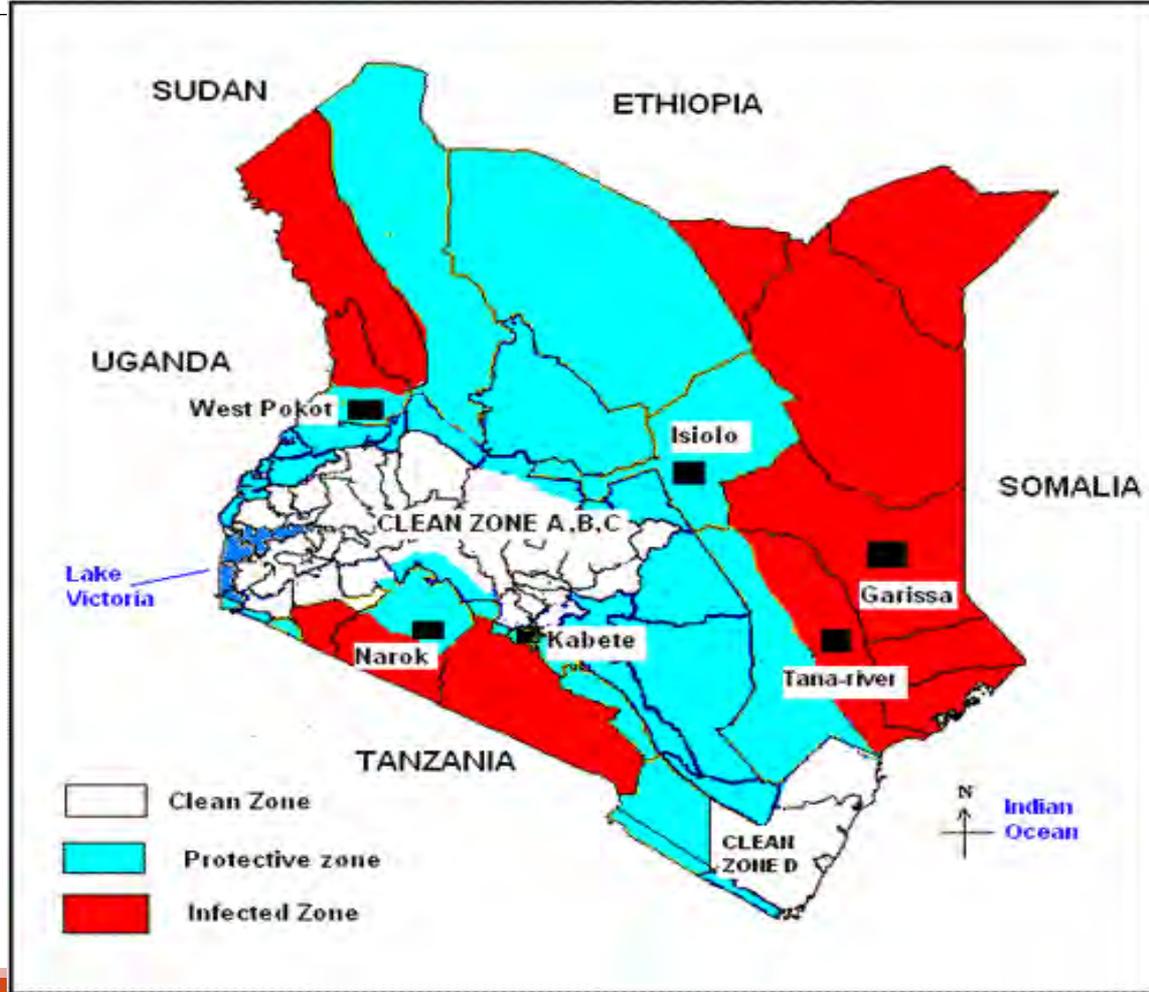
- CBPP testing in Kenya is performed at
- Central Veterinary Laboratories (CVL) of the Department of Veterinary Services, Kabete.
- National Veterinary Research Centre (NVRC) of KARI
- Biotechnology laboratory of KARI
- International Livestock Research Institute (ILRI)
- Mobile field Screening teams distributed strategically to prevent CBPP entry into CBPP clean zones

# CBPP diagnostic tests in Kenya

- Isolation of the causal *Mycoplasma mycoides* subspecies *Mycoides* the small colony variant *MmmSC*
- The OIE prescribed test CFT and cELISA used to establish the tests animals for the purpose of trade sero-surveillance respectively
- Field CFT is used for screening of the animals before movement
- The CVL has the capacity to perform the Immunoblot technique and LAMP-PCR for diagnosis of CBPP.

# Samples for CBPP diagnosis

- Specimens of lung tissue from obvious lesions, tracheobronchial mediastinal lymph nodes, and at least 10 ml of pleural fluid should be collected aseptically.
- Joint fluid from the joints of affected calves
- Pleural fluid (transport in media that protects mycoplasma and prevent other bacteria from multiplying)
- Tissue specimens collected into neutral buffered formalin for histopathology.
- Blood samples for serum (collected from any cattle showing clinical signs and also health looking animals)



## LOCATION OF CBPP FIED TEAMS

# CBPP screening teams

- Central screening team at CVL Kabete (Central part of the country, quality control, technical support for other teams)
- West Pokot screening team that serves the Northern and Western part of the country
- Isiolo screening team that serves the Northern and Eastern part of the country
- Garissa screening team (North-Eastern Province)
- Tana-River screening team (supports Garissa team in providing the 2<sup>nd</sup> CFT test for animals trekking for trade from the North-eastern province to the Coast Province)
- Nakuru screening team which is to be moved to Narok district and serves the Southern part of the country.

Thank you

END