

GF-TADS Africa PROGRESSIVE CONTROL OF TRANSBOUNDARY ANIMAL DISEASES





Food and Agriculture Organization of the **United Nations**



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Case study: Abattoir survey of CBPP lesion of slaughtered cattle stock in northern Tanzania

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SGE3 CBPP

Background

- Contagious bovine pleuropneumonia (CBPP), a WOAH listed disease, is the second most important trans-boundary animal disease (cattle) after rinderpest (Tambi et al 2006)
- CBPP was first introduced in Tanzania in 1916 and was eradicated in 1964(URT, 2010)
- The disease re-emerged in the country in 1990 and since then it has spread widely, threatening the entire national cattle herd
- Annual economic costs of the disease was estimated to be EUR 6.2 million in 2006.

DISTRICTS AFFECTED BY CONTAGIOUS BOVINE FLEURO-PNEUMONIA IN TANZANIA, BETWEEN 1990 AND 2000





SGE3 CBPP Purposes and objectives

We used abattoir surveys as a tool to:

- Evaluate the magnitude of CBPP incidences in the slaughtered cattle.
- Identify the most frequently encountered pre-slaughter pneumonia signs,
- Identify and observe 'CBPP characteristic-like lesions' from slaughtered stock and;
- Estimate the prevalences of CBPP in slaughtered cattle from selected abattoirs/slaughter-slabs in the northern districts of Tanzania.

SGE3 CBPP Methodology (1)

The study was carried out in five abattoirs, two in Tanga region (Muheza and Tanga), one in Kilimanjaro region (Bomang' ombe) and two in Arusha region (Sakina and Karatu).

Pre-slaughter examination of animals

- Age was determined by dentition and categorized into 3 groups: (younger than 6 months, 6-18 months and above 18 months old)
- Questionnaire survey comprising four components:

(abattoir profile, source/destination of slaughtered stocks, pre-slaughter pneumonia signs and post-mortem features)

SGE3 CBPP Methodology (2)

- Each abattoir was visited (by respective abattoir meat inspector) daily for a month, between the period of January and May 2004.
- All animals presented for slaughter were physically observed a day or shortly prior to slaughter.
 - Inspection of the animals was made while at rest or in motion for any obvious signs of disease.
 - Special attention was made to the respiratory related signs like breathing pattern (laboured/distressed), coughing (dry/moist), standing posture (nostril dilated, neck extended)
- Information sought:
 - Records of numbers slaughtered, source of slaughter stock and the lesion(s) observed

SGE3 CBPP Methodology (3)

Post —slaughter examination of animals (post-mortem)

- involved visual examination of all carcasses and organs
- including palpation and;
- incision of tissues/organs
- Samples (sera and tissue) for detailed laboratory investigation could not be collected due to the logistics of sample collection and the diagnostic capacity of the local laboratory
- Monthly prevalence was calculated using the following formula:
 - Proportion of the stock affected by one or more lung lesion(s) to the total (monthly) number of slaughtered stock.

SGE3 CBPP Case definition: main pathological findings (1)



a



a The entire left lung is covered by a thick layer of fibrin (fibrinous pleurisy)

b Enormous sequestrum consisting of necrotic parenchyma (white asterisk *) surrounded by a thick fibrotic capsule (black asterisk*)

c On cut section, a small portion of the healthy lung is seen (black asterisk *) while the remaining surface shows red to grey hepatization of lobules and thickening of interlobular septa (so-called *marbling* appearance of the lung).

d In this case, a large area of necrosis is seen (bordered by a white line). Healthy parenchyma (white asterisk) and hepatization of lobules are also observed

SGE3 CBPP Results and discussion

The average number (mean<u>+</u>SE) of cattle slaughtered per day by abattoir was Muheza 9.70 ± 0.50 , Bomang'ombe 5.40 ± 0.35 , Tanga 29.00 ± 0.42 , Karatu 7.40 ± 0.19 and Sakina 75.80 ± 0.21

Abattoir	Number	Proportion affected
	slaughtered	(n, %)
Tanga	898	4 (0.44)
Muheza	292	2 (0.68)
Boma ngombe	163	0 (0.00)
Sakina	2,884	5 (0.17)
Karatu	223	30 (13.40)
Overall	4,460	61 (0.91)

SGE3 CBPP Pre-slaughter CBPP suggestive clinical signs (n= 61)



SGE3 CBPP Post-slaughter CBPP suggestive signs (n=61)



SGE3CBPPResults and discussion

- The prevalence of lesions was significantly (P< 0.05) higher in Karatu compared to other abattoirs
- Age of the slaughtered animals was not significantly associated with CBPP like lesions (P > 0.05).
- Pleural adhesion and presence of yellowish fluid in the thoracic cavity was observed in 98% and 89% respectively of all cattle that had lung lesions
- Sequestra formation was associated with 20% of all positive CBPP detected slaughtered animals.

SGE3 CBPP Challenges of controlling CBPP Perspectives from Tanzania

- Policies, legislatives and institutional challenges,
- Failure in the delivery of veterinary services,
- Lack of a cattle identification system, natural phenomenon, livestock husbandry systems in the traditional sector, human movements, traditional practices among cattle farmers and cattle marketing systems,
- Uphazard use of antibiotics and un-coordinated vaccination programme
- Financial constraints to sustain surveillance and vaccination,
- Low awareness amongst producers, leaders and public on the disease impact.

SGE3 CBPP Conclusions and recommendations

- CBPP remains a problem in the northern districts and may be considered endemic in Tanzania
- Coordinated territorial efforts to eradicate the disease through improvements of cattle movement control, strengthening epidemiosurveillance networks and vaccination should be intensified.
- Tracing the source of infected cattle detected at abattoirs and enforcement of strict rules for livestock movement can aid in the control of the disease in such areas.
- This work has confirmed that targeted monitoring (surveillance) for CBPP lesions through meat inspection can be a useful tool for CBPP surveillance in endemic countries like Tanzania.

Thank you for your attention Asanteni sana !



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