GUIDELINES ON HARMONISED PROCEDURES FOR ANTE MORTEM AND POST MORTEM INSPECTION AS A SURVEILLANCE TOOL FOR CONTAGIOUS BOVINE PLEUROPNEUMONIA

Version 1.0
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Prepared by: Lucía Manso-Silván, Garoma Desa Hedeta, Geoffrey M. Muuka and Massimo Scacchia.

World Organisation for Animal Health

Regional Representation for Africa
rr.africa@woah.org

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GUIDELINES ON HARMONISED PROCEDURES FOR ANTE MORTEM AND POST MORTEM INSPECTION AS A SURVEILLANCE TOOL FOR CONTAGIOUS BOVINE PLEUROPNEUMONIA

Draft Version 3.0

Prepared by: Lucía Manso-Silván, Garoma Desa Hedeta, Geoffrey M. Muuka and Massimo Scacchia
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Cover image : cattle in Mashare, Namibia (c) Massimo Scacchia (IZS Teramo) 2008.

Contents

Foreword

Contagious Bovine Pleuropneumonia (CBPP) remains one of the most significant transboundary animal diseases affecting the cattle sector across Africa. Its impact on livestock productivity, pastoral livelihoods, food security and regional trade continues to be substantial. Strengthening early detection and reporting systems is therefore essential to support effective, evidence-based disease control programmes.

Abattoir-based surveillance, when systematically conducted, provides a unique opportunity to detect CBPP-compatible lesions, trace suspected cases to their origin, and generate high-quality data for national and regional decision-making. Harmonised ante-mortem and post-mortem inspection procedures, supported by aligned reporting tools are crucial to ensuring that the information collected across countries is comparable, timely and fit for purpose.

This manual provides standardised guidelines and practical tools to support veterinarians, meat inspectors, para-professionals, and other relevant actors involved in slaughterhouse operations. The procedures outlined herein contribute directly to the continental objectives of progressive CBPP control under WOAH frameworks, as well as to the goals of the GF-TADs for Africa.

We extend our appreciation to all national veterinary services, laboratories, abattoir personnel and regional technical partners who actively contribute to CBPP surveillance efforts. Your role is essential in safeguarding animal health and sustaining the livelihoods of communities across the continent.

Dr. Karim Tounkara
Regional Representative for Africa
World Organisation for Animal Health (WOAH)

Acknowledgements

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Our appreciation extends to national veterinary authorities, abattoir inspectors, epidemiology units, laboratory personnel, and the members of the GF-TADs for Africa networks whose insights, field experience, and collaborative efforts continue to enhance CBPP surveillance and control on the continent.

Finally, WOAH expresses its gratitude to the Government of the Republic of Italy for the financial support that made the development and future implementation of these harmonised guidelines possible.

1. PURPOSE, SCOPE AND USERS

1.1. Purpose

These harmonised guidelines establish practical procedures for the identification of clinical signs and pathological lesions typical of Contagious Bovine Pleuropneumonia (CBPP); the safe and correct collection of diagnostic samples; and the systematic recording and reporting of suspected or confirmed CBPP cases during *ante-mortem* (AM) and *post-mortem* (PM) inspections at slaughterhouses/abattoirs, livestock markets, and during emergency culling or field slaughter operations.

The purpose of these guidelines is to promote the early detection, confirmation, and reporting of CBPP in compliance with international standards, thereby contributing to national and regional control and eradication efforts.

1.2. Scope

This guideline applies to all official and private veterinarians, animal health inspectors, meat inspectors, laboratory personnel, and surveillance officers involved in CBPP surveillance and diagnosis. In under-served and/or remote areas, traditional leaders and local community members may also contribute to detection and reporting, provided they have received adequate training on CBPP and its characteristic pathological lesions. All personnel will receive remote support from experts through the Remote Veterinary Assistance mechanism.

The guideline provides standardised procedures and templates for conducting AM and PM inspections of cattle to ensure that CBPP surveillance is systematic, harmonised, and comparable across regions and laboratories. It also supports national strategies for disease control, including vaccination, animal movement regulation, outbreak management, and monitoring of antibiotic use and residues in meat where applicable.

1.3. Alignment with International Standards

These guidelines are consistent with the World Organisation for Animal Health (WOAH) Terrestrial Code and Terrestrial Manual. They may be adapted to national legislation and epidemiological risk contexts to

ensure practical implementation while maintaining compliance with international surveillance and reporting requirements.

1.4. Rationale

CBPP, caused by *Mycoplasma mycoides* subsp. *mycoides* (*Mmm*), is a highly contagious respiratory disease of cattle that poses a significant threat to livestock productivity, trade, reduction of poverty and food security in many African countries.

Effective surveillance depends on the consistent detection, recording, and reporting of suspected cases during ante-mortem and post-mortem inspections. Variations in inspection procedures, diagnostic interpretation, and reporting formats have led to inconsistent data and underreporting. Therefore, harmonised guidelines and standardised templates are essential to improve diagnostic consistency, data quality, and timely outbreak detection and reporting.

1.5. Objectives

1. Detect CBPP-compatible clinical signs and, above all, pathological lesions that can be regarded as pathognomonic for the disease.
2. Collect and submit appropriate diagnostic samples safely and correctly, when a veterinary diagnostic laboratory is available and capable of confirming the diagnosis. But it is important that this activity must neither hinder lesion detection not reporting.
3. Assess the use of antibiotics in slaughtered animals through the detection of local muscle necrotic lesions caused by injections of oily formulations of long-acting antibiotics.
4. Ensure evidence-based and well-documented decisions on carcass and offal disposal.
5. Generate high-quality, analysable data that contribute to national and international CBPP surveillance systems.
6. Protect human health, the food chain, and animal welfare.
7. Promote harmonised inspection, data collection, recording, and reporting procedures across abattoirs and inspection points to improve the comparability of surveillance data.
8. Strengthen both passive and active surveillance systems for the early detection and confirmation of CBPP.

2. DEFINITIONS AND CASE CLASSIFICATION

2.1. Definition

Contagious Bovine Pleuropneumonia: A contagious respiratory disease of ***Bovidae*** caused by *Mycoplasma mycoides* subsp. *Mycoides (Mmm)*.

2.2. Case Definitions for Surveillance

Suspected animal at ante-mortem inspection: A bovine showing one or more of the following: fever; respiratory distress (dyspnoea or tachypnoea); frequent coughing; painful breathing; nasal discharge; abnormal stance (elbows abducted); weight loss; and/or an epidemiological link to a known or suspected CBPP focus.

Suspected carcass at PM Inspection: Lungs and pleura showing one or more of the following unilateral (occasionally bilateral) lesions: unilateral or bilateral fibrinous pleuritis ("omelette"), often with adhesions; marbled hepatization and thickening of interlobular septa; *Sequestra* (necrotic foci with a fibrous capsule), especially in chronic cases/stage; abundant straw-coloured or sero-fibrinous pleural fluid (in acute stage). Lesions are typically odourless.

A collection of photographs illustrating CBPP lesions at different stages will be provided in Appendix 1. Photographs of differential pathologies will be provided in Appendix 2.

Probable case: A suspected case with a strong epidemiological link (e.g., within the same herd, contact during transhumance, or recent movement from a CBPP endemic zone) and/or the presence of typical gross lesions consistent with CBPP.

Confirmed case: Detection of *Mmm* by culture and/or polymerase chain reaction (PCR) from lung tissue, lymph nodes, or pleural fluid; or evidence of seroconversion/positive serology e.g., complement fixation test (CFT) or competitive enzyme-linked immunosorbent assay (c-ELISA), consistent with clinical and/or PM findings as interpreted by a recognised veterinary diagnostic laboratory.

Note: Laboratory confirmation is not mandatory in all settings. It should be undertaken whenever sample submission to a veterinary diagnostic laboratory is feasible.

3. PRINCIPLES OF RISK-BASED ANTE-MORTEM AND POST-MORTEM INSPECTION

3.1. Universal screening at ante-mortem inspection: Conduct inspection of all animals presented for slaughter.

Apply targeted intensification when risk indicators are present, such as:

- reports by farmers of deaths with thoracic lesions not verified by trained personnel;
- recent movements from CBPP-endemic areas;
- occurrence of multiple respiratory cases;
- seasonal clustering;

or

- trade and marketing networks linked to affected areas.

3.2. Segregation, sampling, and traceability: Promptly separate suspect animals to avoid contact with healthy stock. In the African context, it will be difficult, but ensure, wherever possible, brand or individual animal identification (ID), and maintain clear lot linkage from the village or farm of origin to the slaughterhouse. Collect samples and submit them, as soon as possible, to a veterinary diagnostic laboratory, if available.

3.3. Safety and biosecurity: Implement robust biosecurity measures within the slaughterhouse and inspection areas, including the use of *personal protective equipment* (PPE), disinfection of equipment, and safe disposal of contaminated materials.

3.4. Data quality: Use standardised inspection and sampling forms, assign unique sample identification codes, and, whenever feasible, apply geo-tagging to enhance traceability and data analysis.

3.5. Timely reporting: As CBPP is a notifiable disease, trigger immediate notification and reporting through official veterinary channels, following national disease reporting procedures.

3.6. Fit-for-purpose decisions: Apply conservative food safety judgements when systemic illness or generalized lesions are observed. In other cases, determine carcass and offal disposal based on lesion extent and in accordance with national meat inspection regulations.

4. ROLES AND RESPONSIBILITIES

4.1. Official Veterinarian (OV):

- Provides overall oversight of ante-mortem and post-mortem inspection activities.
- Makes final decisions on ante-mortem and post-mortem Inspections.
- Identifies CBPP lesions, including through the use of CBPP and others respiratory diseases lesion photographs collection, Appendices 1 and 2 and Veterinary Remote Assistance, see Appendix 4. Record lesions using form in Appendix 3.
- Assesses the muscle groups typically used by livestock producers for the intramuscular administration of long-acting antibiotics to detect potential necrotic lesions and document their presence.
- Authorises sample collection, when a veterinary diagnostic laboratory with the capability to detect *Mmm* and/or antibiotic residues is located nearby, and ensures safe handling and labelling.
- Reports suspected and confirmed cases to the *Competent Authority* (CA).
- Liaises with the CA and designated laboratories for confirmation and data exchange.

4.2. Meat Inspector / Paraprofessional:

- Conducts routine ante-mortem observations and post-mortem organ inspections under the supervision of the OV. Record pathological lesions using Appendix 3 form.
- Recognises CBPP-compatible lesions, using, if it is needed, photographic references, Appendix 1 and 2 and Veterinary Remote Assistance where applicable.
- Assesses the muscle groups typically used by livestock producers for the intramuscular administration of long-acting antibiotics to detect potential necrotic lesions and document their presence.
- Collects samples when possible, following OV instructions.
- Maintains proper records of inspections, findings, and collected samples.
- Assists the OV in making informed decisions on carcass and offal disposal.

4.3. Traditional Leaders / Local Communities:

- In under-served and/or remote areas, contribute to disease detection after receiving adequate training on CBPP and its characteristic pathological lesions.
- Conduct basic ante-mortem observations and report suspicious cases or carcasses to the OV or local veterinary authority.
- Support lesion recognition using photographic aids, Appendix 1 and 2 and Veterinary Remote Assistance Appendix 4.
- Assist in sample collection and recordkeeping, under the remote guidance of the OV using Appendix 3.

4.4. Abattoir Staff:

- Ensure proper animal handling, segregation of suspect animals, and *cleaning and disinfection* (C&D) of lairage facilities.
- Record the administration of veterinary drugs, especially antibiotics, having verified the muscular necrosis caused by the adjuvants of long-acting antibiotics.
- Facilitate movement control and assist in applying biosecurity measures.

4.5. Laboratory Personnel:

- Select and perform diagnostic tests (e.g., PCR, culture, serology) according to established procedures.
- If possible, they demonstrate the presence of antibiotic residues in the muscle samples collected.
- Implement quality assurance measures and maintain traceability of samples.
- Archive isolates, DNA, and related materials as per institutional and national policies.
- Report laboratory results within agreed turnaround times.

4.6. Surveillance Unit / Epidemiology Team:

- Collect, manage, and analyse data from slaughterhouse inspections and laboratory results.
- Provide feedback to field and inspection teams.
- Initiate outbreak investigations when epidemiological signals indicate possible CBPP transmission.
- Ensure integration of CBPP surveillance data into national and regional animal health information systems.
- Where necrotic muscular lesions are identified at anatomical sites, routinely used by livestock producers for the intramuscular administration of long-acting antibiotics, such information shall be collected and notified to the competent national authorities as "*Suspected lesions attributable to long-acting antibiotic administration*", irrespective of subsequent laboratory confirmation.

5. RISK INDICATORS AND TARGETING

Prioritise intensified inspection and, where feasible, sampling if any of the following risk indicators apply:

- Animals originating from known CBPP-endemic districts, involved in transboundary movements, or following transhumance/herder trek routes.
- Multiple animals within the same lot exhibiting respiratory signs.
- CBPP-suspect lesions detected at the abattoir.
- Seasonal risk factors such as dry season congregations, market aggregation, or long-distance transport stress.

6. ANTE-MORTEM PROCEDURES

6.1. Flow

6.1.1. **Observation of animals**: Observe the group of animals in the slaughter queue for cough frequency, laboured respiration, open-mouth breathing, extended head and neck, elbow abduction, and nasal discharge.

6.1.2. **Clinical examination of suspect cases**: Measure temperature and respiratory rate; conduct auscultation when feasible (pleuritic friction rubs); and check for pain and opacity on thoracic percussion (most often unilateral).

6.1.3. **Segregation**: Move suspect animals to a dedicated pen, minimise stress, and ensure access to water.

6.1.4. **Identification**: When is possible, link animal brand, ID/ear tag, or lot number to the lairage card and slaughter docket; attach a '*Suspect CBPP*' tag.

6.1.5. **Ante-Mortem Sampling**, when indicated and possible:

- Whole blood (serum): 7–10 ml in a red-top vacutainer for c-ELISA or CFT (screening of cohorts or epidemiological studies).
- Nasal swabs: not recommended for routine CBPP confirmation due to low sensitivity.

6.1.6. **Collection and recording of information**, using Annex1: Ante mortem inspection form.

6.1.7. **Ante-Mortem judgement**: Fit for slaughter with enhanced PM inspection; or condemn on ante-mortem if systemic illness, septicaemia, or severe respiratory compromise is evident, in accordance with national regulations. Emergency slaughter: If an animal is moribund and emergency slaughtered, plan comprehensive PM sampling (see section 7.3).

6.2. Ante-mortem inspection information

Collect information using Annex A: Ante Mortem Inspection Form.

6.3. Animal welfare

Ensure low-stress handling. Avoid transport of dyspnoeic animals. Implement, when possible, prompt euthanasia if animals are in severe distress and unfit to stand or travel.

7. POST-MORTEM PROCEDURES

7.1. Thoracic Opening and Safety

- Wear gloves, eye and face protection; where possible avoid sawing that generates aerosols.
- Open the thorax carefully and collect pleural fluid before manipulating organs.

7.2. Lesion Recognition-Typical CBPP

Refer to Appendix 1 for photographic examples of CBPP lesions at different stages. Refer to Appendix 2 for differential diagnosis. Refer to Appendix 3 for lesions recording.

- **Acute stage**: Abundant straw-coloured or sero-fibrinous pleural effusion, fibrin sheets, fibrinous pleuritis, and marbled hepatisation. Lesions are usually unilateral but may be bilateral.
- **Chronic stage**: *Sequestra* (necrotic foci with a fibrous capsule), thick pleural adhesions, and organising pleuritis with firm adhesion between parietal and visceral pleura.
  The trachea is generally free of exudate.

7.3. Sampling post-mortem – Minimum diagnostic panel

- Collect all samples before carcass washing or contamination.
- Assign a unique Case ID linking all samples to the carcass and corresponding lairage/lot record.
- Pleural fluid: 5–10 ml, placed in a sterile tube (for PCR/culture).
- Lung tissue: 2–3 pieces (~10 cm^3) from active lesion margins (red–grey consolidation or capsule of *Sequestra*); place in sterile containers or plastic bags.
- Lymph nodes: whole mediastinal and tracheobronchial lymph nodes; place in sterile containers or plastic bags.
- Swabs: Sterile swabs from cut surfaces (in transport medium) if tissue transport is not feasible.
- Serum (if not collected during ante-mortem inspection): From clotted blood during slaughter or pre-slaughter jugular sample for serological testing.
- Formalin-fixed tissue (optional): Representative sections, at the interface between apparently healthy and pathological parenchyma, for histopathology (10:1 formalin to tissue ratio).

7.4. Packaging and Transport

- Use triple packaging: leak-proof primary container, absorbent material, sealed secondary container, and rigid outer packaging with ice packs or dry ice.
- Label clearly with Case ID, sample type, animal ID, date/time, and collector.
- Complete Form C – Laboratory submission form with clinical/PM synopsis and differential diagnoses.

7.5. Post-mortem Inspection information

Collect information using Annex B: Post-mortem inspection form.

7.6. Post-mortem Judgement

- Affected lungs and pleura: **CONDEMN.**
- Generalised disease or systemic illness (cachexia, fever, septic changes): **TOTAL CARCASS CONDEMNATION.**
- Localised sub-acute or chronic lesions without systemic compromise: Carcass may be conditionally **APPROVED** per national rules (e.g. following heat treatment), but conservative judgement is advised.
- Necrotic or haemorrhagic lesions in neck or rump muscles caused by suspect injections of oily adjuvant of long-acting antibiotics with
    - Lab confirmation: **TOTAL CARCASS CONDEMNATION.**
    - No Lab confirmation: Conditionally **APPROVED**

Maintain full traceability and hold the lot pending laboratory advice when specific triggers apply (see §10).

8. LABORATORY TESTING

When veterinary diagnostic laboratories are available in the region and are capable of performing laboratory diagnosis of CBPP, appropriate testing should be conducted to confirm suspected cases.

However, the absence of laboratory confirmation must not delay or prevent the reporting of pulmonary and pleural lesions consistent with CBPP to regional and national authorities.

8.1. Direct Detection

• *Polymerase Chain Reaction* (PCR): Traditional (conventional) and/or real-time. Performed on pleural fluid or lesion tissue; recommended as the primary method for rapid confirmation.
• Culture: Isolation of *Mmm* on specific mycoplasma media. Although slower, this method supports epidemiological investigations, strain characterisation, and allows for antimicrobial sensitivity testing.

8.2. Serology (Herd / Cohort Level)

• c-ELISA (competitive ELISA): Recommended for screening or confirmatory use depending on laboratory policy.
• CFT: May be used in parallel or sequentially with c-ELISA as advised by the competent authority.

8.3. Interpretation

• Detection of *Mmm* by PCR or culture from a compatible lesion is sufficient to confirm a CBPP case.
• Serological results support herd-level inference but should be interpreted with caution at the individual level, taking into account vaccination history and the dynamics of antibody response.

8.4. Quality Assurance

• Laboratories should use validated assays that meet recognised standards and include appropriate positive and negative controls (e.g. reference materials).
• Wherever possible, participation in external proficiency testing programmes is encouraged to ensure ongoing quality assurance and compliance with ISO/IEC 17025 or equivalent accreditation standards.
• All diagnostic activities must adhere to biosafety and biosecurity procedures relevant to *Mmm* handling.

9. TRIGGERS FOR REPORTING AND ENHANCED ACTIONS

Immediate notification to the *Competent Authority* (CA) is required when any of the following occur:

- Post-Mortem detection of lesions that are typical of CBPP in any bovine, with or without a compatible clinical history.
- Two or more suspect animals from the same lot or herd are detected within 14 days at the same facility.
- When feasible, a positive PCR or culture result confirming *Mmm*.
- When necrotic or haemorrhagic lesions in neck or rump muscles are identified.

On-site actions pending laboratory results:

- Segregate suspect carcasses and affected parts.
- Implement enhanced *cleaning and disinfection* (C&D) of the slaughter line, equipment, and tools.
- Maintain and secure full traceability information for the lot/herd of origin.
- Alert the surveillance/epidemiology team for possible traceback and forward tracing.

10. DATA MANAGEMENT AND INDICATORS

Use Annex A (Ante-mortem inspection form), Annex B (Post-mortem inspection form), and Form C (Laboratory submission) — see Annexes for templates.

10.1. Minimum Dataset

Animal ID/lot, origin/district, trader or transporter, ante-mortem signs, PM lesions, and notifier details.

Wherever possible, include: facility ID, date/time, coded PM lesions, samples taken, carcass disposal, laboratory results, and notifier information.

10.2. *Key Performance Indicators* (KPIs)

- CBPP-compatible lesion detection rate: number of compatible cases per 1,000 cattle slaughtered.
- Sample submission rate: proportion of suspected cases with samples submitted (target ≥90% under optimal conditions).
- *Positive predictive value* (PPV): proportion of post-mortem lesions confirmed by PCR or culture (confirmed ÷ total sampled suspects).
- Timeliness of laboratory reporting: median number of days from sample collection to laboratory result (target ≤7 days).
- Timeliness of notification: time between lesion detection and official notification (target ≤24 hours).

11. BIOSAFETY, BIOSECURITY AND WASTE MANAGEMENT

- *Personal Protective Equipment* (PPE): Gloves, waterproof apron, and eye/face protection are mandatory. Change gloves between cases to prevent cross-contamination.
- Sharps and Tools: Knives and saws used on suspect cases must be disinfected after use. Avoid power saws that generate aerosols.
- *Cleaning and Disinfection* (C&D): Disinfect contact surfaces and tools using approved disinfectants effective against *Mycoplasma* spp. Ensure appropriate contact time as per manufacturer recommendations.
- Waste Management: Dispose of condemned tissues according to national or local regulations (e.g., rendering, incineration). Manage effluent carefully to prevent environmental contamination.

12. ANIMAL WELFARE AND LAIRAGE BIOSECURITY

- Maintain separate pens for sick or suspect animals to minimise contact with healthy stock.
- Provide shade, adequate drinking water, and handle animals calmly to reduce stress.
- Clean and disinfect pens between lots; implement vector and rodent control measures.
- Restrict public access to lairage and inspection areas to maintain biosecurity.

13. TRAINING AND COMPETENCY

- **Initial training**, conducted online and/or on-site. Topics include CBPP clinical and post-mortem lesion recognition, differential diagnosis, sampling, packaging, documentation (forms), biosafety and Veterinary Remote Assistance.
  In remote or under-served areas, traditional leaders and local community members should be involved after receiving adequate training also utilising Veterinary Remote Assistance.
- **Refresher training** (annual): Includes blind image or lesion recognition quizzes, supervised practical sessions, and updates from laboratories and surveillance teams.
- **Competency logs**: Inspectors should maintain individual portfolios documenting cases examined and accuracy rates compared to laboratory results.

14. QUALITY ASSURANCE AND SUPERVISION

In cases where it is logistically and economically practicable:

- Conduct periodic supervisory audits.
- Perform random re-inspections of a sample of non-suspect carcasses to verify consistency of inspection outcomes.
- Validate data for completeness and internal consistency before entry into the surveillance database.

15. COORDINATION AND COMMUNICATION

- Notify the local veterinary office and the central epidemiology unit immediately in accordance with procedures for notifiable diseases.
- Provide, wherever possible, monthly feedback to facilities summarising detections, laboratory confirmations, and recurring issues.
- Cross-reference all findings with national CBPP control plans (movement control, vaccination, outbreak investigation) and with international reporting obligations under WOAH frameworks.

16. DECISION AIDS

16.1. Ante-mortem decision tree

Queue scan:

Any respiratory distress, cough, or abnormal stance?

No → Routine PM inspection.

Yes ↓

Clinical examination + temperature check:

→ Febrile or severe dyspnoea?

Yes → Condemn at AM or perform emergency slaughter as per national rules. Plan detailed PM examination and, where feasible, collect samples.

No ↓

Segregate + identify animal + collect serum (if part of cohort study).

→ Mark "Enhanced PM".

→ Proceed to PM procedures (see Section 7).

16.2. Post-mortem decision tree

Open thorax safely → Collect pleural fluid first → Inspect lungs and pleura.

16.2.1. Typical CBPP lesions present (e.g., fibrinous pleuritis, marbling, ± *Sequestra):*

- Record and communicate as suspected CBPP.
- Where feasible, collect the full sampling panel (see Section 7.3).
- Condemn lungs and pleura.
- Assess carcass:
  → If systemic illness is present → Total condemnation.
  → If localised lesions only → Conditional approval per national rules.
- Notify per Section 9 and maintain traceability hold.

16.2.2. Lesions atypical or unclear:

- Collect samples for differential diagnosis as advised.
- Make a provisional judgement and document thoroughly.
- Use Veterinary Remote Assistance if needed and available.

17. EXPECTED OUTCOMES

- Improved accuracy, consistency, and comparability of CBPP surveillance data across facilities and regions.
- Early detection of CBPP outbreaks through systematic abattoir-based monitoring.
- Strengthened coordination and data flow between field teams, abattoirs, and veterinary laboratories.
- Enhanced decision-making capacity for CBPP control and eradication programmes.
- Harmonised reporting contributing to regional and continental CBPP surveillance and control initiatives under WOAH frameworks.

18. ANNEXES (TEMPLATES AND STANDARD OPERATING PROCEDURES)

The following annexes provide standardised operational templates and procedures to ensure harmonised implementation of CBPP surveillance and inspection guidelines across all inspection points and laboratories.

• **Annex A** — Ante-mortem inspection form — Checklist and data fields for ante-mortem inspection.

• **Annex B** — Post-mortem inspection form — Checklist and data fields for post-mortem inspection.

• **Annex C**: Laboratory submission form — Case synopsis, sample inventory, and cold chain monitoring log.

• **Annex D**: Sampling SOP — Specifies who collects, what to collect, where, and how — with photographs illustrating sampling sites on the lung and lymph nodes.

ANNEX A. ANTE-MORTEM INSPECTION FORM

Draft Version 1.0

Prepared by: Lucía Manso-Silván, Garoma Desa Hedeta, Geoffrey M. Muuka and Massimo Scacchia
Date: 7th November 2025

General Information

Slaughterhouse name: _____

Official veterinarian or meat inspector: _____

Date: _____

Time of inspection: _____

Number of animals inspected: _____

Source farm / holding ID: _____

Farmer name: _____

Transporter / vehicle ID: _____

Batch / lot number: _____

Animal ID number or branding: _____

Clinical Assessment for CBPP

Parameter	*Yes*	*No*	*Remarks*
Fever (≥ 39.5°C)	☐	☐	_____
Respiratory distress / dyspnea	☐	☐	_____
Coughing (persistent, painful)	☐	☐	_____
Nasal discharge	☐	☐	_____
Abnormal respiratory sounds (pleuritic noises)	☐	☐	_____
Weight loss / emaciation	☐	☐	_____
Pain on palpation of thorax	☐	☐	_____
Lethargy / weakness	☐	☐	_____
Abnormal posture / reluctance to move	☐	☐	_____

Epidemiological Risk Indicators

Item	*Yes*	*No*	*Remarks*
Recent movement from CBPP-risk region	☐	☐	_____
Previous CBPP outbreaks at farm of origin	☐	☐	_____
No valid health certificate	☐	☐	_____
Suspicious mortality reported on farm	☐	☐	_____
Contact with suspect / infected herds	☐	☐	_____

Inspector's Decisions

Option	*Check*	*Remarks*
Fit for slaughter	☐	_____
Temporarily withheld for further examination	☐	_____
Immediate isolation of suspect animals	☐	_____
Notification to *Competent Authority* (CA)	☐	_____

Sample collections

Sample	*Yes*	*No*	*Remarks*
Blood	☐	☐	_____
Nasal swab	☐	☐	_____

Additional Comments

_____

_____

_____

_____

Signature (Official veterinarian or meat inspector): _____

ANNEX B. POST-MORTEM INSPECTION FORM

Draft Version 1.0

Prepared by: Lucía Manso-Silván, Garoma Desa Hedeta, Geoffrey M. Muuka and Massimo Scacchia

Date: 7th November 2025

General Information

Slaughterhouse name: _____

Official veterinarian or meat inspector: _____

Date: _____

Time of inspection: _____

Number of animals inspected: _____

Source farm / holding ID: _____

Farmer name: _____

Transporter / vehicle ID: _____

Batch / lot number: _____

Animal ID number or branding: _____

Macroscopic Lesions Findings

Please also comply with the requirements specified in Appendix 3.

Lesion	*Present*	*Absent*	*Remarks (Size, color)*
Unilateral lesions	☐	☐	_____
Fibrinous pleuritis	☐	☐	_____
Pleural adhesions	☐	☐	_____
Fibrinous exudate	☐	☐	_____
Pulmonary consolidation	☐	☐	_____
Marmorisation	☐	☐	_____
Interlobular septa ectasic	☐	☐	_____
Sequestra	☐	☐	_____
Emaciation / poor body condition	☐	☐	_____

Additional notes / observations

_____

_____

Inspection of Injection Sites

Parameter	*Yes*	*No*	*Remarks*
Muscular necrotic lesions at typical IM injection sites	☐	☐	_____
Fibrosis or granuloma at injection site	☐	☐	_____

Sampling

Sample Type	*Taken*	*Not taken*	*Remarks*
Lung tissue	☐	☐	_____
Thoracic lymph nodes	☐	☐	_____
Pleural exudate	☐	☐	_____
Suspect muscle tissue (injection sites)	☐	☐	_____

Decision

Action	*Select*	*Remarks*
Carcass approved	☐	_____
Carcass detained pending lab results	☐	_____
Carcass condemned	☐	_____
Notification to *Competent Authority* (CA)	☐	_____
Epidemiological follow-up recommended	☐	_____

Additional comments/observations

_____

_____

_____

Signature (Official veterinarian or meat inspector): _____

ANNEX C. LABORATORY SUBMISSION FORM

Draft Version 1.0

Prepared by: Lucía Manso-Silván, Garoma Desa Hedeta, Geoffrey M. Muuka and Massimo Scacchia

Date: 7th November 2025

Veterinary Diagnostic Laboratory

Name: _____

Address: _____

Contact person: _____

Phone: _____

Email: _____ @ _____

Submitting Authority / veterinarian

Official veterinarian / submitting officer: _____

Position / title: _____

Competent Authority / organisation: _____

Contact (phone / email): _____

Holding / Farm Information

Farm / holding name: _____

Farm / holding identification code: _____

Owner / responsible person: _____

Address: _____

Region / district: _____

Contact (phone / email): _____

Animal / carcass information

Number of animals sampled: _____

Animal ID(s) / ear tag(s): _____

Age: _____

Sex (M/F): _____

Production type (dairy/beef/mixed): _____

Clinical history: _____

Epidemiological Information

Suspected CBPP case: ☐ yes ☐ no

Reason for suspicion: clinical signs / ante-mortem lesions / post-mortem lesions / epidemiological link / surveillance / other:

_____

Movement history (last 30 days): _____

_____

Vaccination history: _____

_____

Antibiotic treatment history: _____

_____

_____

_____

Samples Submitted

Sample type	Quantity	ID,Label	Preservation	For lab test
Lung tissue	_____	_____	Chilled/Frozen/Fixative	PCR / Culture / Histopathology
Pleural exudate	_____	_____	Chilled/Frozen	PCR / Culture
Mediastinal and tracheobronchial lymph nodes	_____	_____	Chilled/Frozen/Fixative	PCR / Culture / Histopathology
Suspect muscle tissue	_____	_____	Chilled/Frozen/Fixative	Histopathology / Residue test
Other (specify) _____	_____	_____	Chilled/Frozen/Fixative	PCR / Culture / Histopathology / Residue test

Laboratory Tests Requested

☐ PCR traditional and/or Real-time for *Mycoplasma mycoides* subsp. *mycoides*
☐ Bacterial and *Mycoplasma* culture and identification
☐ Histopathology
☐ Antibiotic residue testing
☐ Other

Additional notes / observations

_____

_____

Declaration

I hereby declare that the information provided is true and complete to the best of my knowledge.

Signature of submitting officer: _____

Date: ____ / ____ / _____

Official stamp (if applicable): _____

ANNEX D. STANDARD OPERATING PROCEDURE : CONTAGIOUS BOVINE PLEUROPNEUMONIA (SAMPLING AT ABATTOIRS)

Document ID: SOP-CBPP-ABT-01
Version: 1.0
Effective Date: ___ / ___ / _____ **Review Date:** 07 / 12 / 2025
Prepared by: Massimo Scacchia **Approved by:** _____

1. Purpose

To provide a standardized procedure for sampling suspected *Contagious Bovine Pleuropneumonia* (CBPP) lesions in cattle at slaughterhouses, ensuring biosafety, traceability, and high diagnostic quality of samples.

2. Scope

This SOP applies to all veterinarians, meat inspectors, animal health technicians, and laboratory personnel involved in CBPP surveillance and diagnosis in cattle slaughtered at abattoirs or slaughter slabs.

3. Responsibilities

3.1 Official Veterinarian (OV) / District Veterinary Officer (DVO)

- Oversees inspection and confirms suspicion of CBPP lesions.
- Authorizes sampling.
- Ensures correct labeling and documentation.
- Notifies competent veterinary authorities according to national regulations.

3.2 Meat Inspectors / Sampling Veterinarian / Animal Health Technician

- Collect samples following this SOP.
- Use appropriate PPE and biosafety procedures.
- Maintain sample integrity and cold chain.
- Record herd and trader information when available.

3.3 Laboratory Personnel

- Receive and register samples.
- Perform diagnostic testing (PCR, culture, histopathology, serology when applicable).
- Report results to the OV and competent authority.

4. Definitions

CBPP : Contagious Bovine Pleuropneumonia caused by *Mycoplasma mycoides subsp. mycoides*, a severe respiratory disease of cattle.

Suspect lesion: Fibrinous pleuropneumonia, marbled lung appearance, chronic encapsulated lesions or *sequestra*, pleural exudate, and/or pleural adhesions. Lesions may involve only one lung.

PPE : Personal Protective Equipment refers to protective clothing, helmets, goggles, gloves, and other items designed to safeguard the wearer from injury or infection. PPE is crucial in minimizing exposure to physical, chemical, biological, and other hazards that can cause serious injuries or illnesses

5. Biosafety Requirements

- Required PPE: gloves, waterproof apron, mask, and eye protection.
- Use disposable instruments whenever possible.
- If instruments are reused, disinfect thoroughly and rinse or flame-sterilize before collecting the next sample.
- Avoid aerosol generation.
- Disinfect work surfaces with an approved disinfectant effective against *Mycoplasma* (e.g. chlorine-based disinfectant).

6. When to Sample

Sampling must be performed when post-mortem inspection reveals:

- Fibrinous pleuropneumonia
- Marbled lung lesions
- Chronic encapsulated pulmonary lesions
- Lung *sequestra*
- Thickened pleura with adhesions
- Serofibrinous pleural fluid

These lesions may be present in only one lung.

7. What to Sample

Assign a unique Case ID linking all samples to the carcass and corresponding lairage/lot record.
Collect the following specimens when lesions are present:

- Pleural fluid: 5–10 mL, placed in a sterile tube (for PCR/culture).
- Lung tissue: 2–3 pieces (~10 cm^3) from the edge of the lesion (affected tissue plus adjacent normal tissue: red–grey consolidation or capsule of *Sequestra);* place in sterile containers or plastic bags.
- Lymph nodes: whole mediastinal and tracheobronchial lymph nodes; place in sterile containers or plastic bags.
- Swabs: Sterile swabs from cut surfaces (in transport medium) if tissue transport is not feasible.
- Serum (if not collected AM): From clotted blood during slaughter or pre-slaughter jugular sample for serological testing.
- Formalin-fixed tissue (optional): Representative sections, at the interface between apparently healthy and pathological parenchyma, for histopathology (10:1 formalin to tissue ratio).

8. Where to Sample

- Directly from the carcass during post-mortem inspection. Collect all samples before carcass washing or contamination.
- From the interface between diseased and healthy tissue.
- Avoid contaminated or exposed surface areas.
- Use sterile instruments for each animal.

9. How to Sample

9.1 Preparation

- Confirm animal and carcass identification.
- Prepare sterile containers and labels before sampling.
- Wear appropriate PPE.

9.2 Collection Procedure

1. Disinfect instruments (or flame-sterilize where safe and permitted).
2. Make a clean incision into the lesion.
3. Collect tissue from the lesion border.
4. Collect pleural fluid with a sterile syringe, if present.
5. Place samples in sterile, leak-proof containers.
6. Avoid cross-contamination.
7. Disinfect instruments and change gloves between animals.

9.3 Labelling

Each sample must include:

- Animal ID or carcass number
- Date and time of sampling
- Abattoir name and location
- Sampler name
- Sample type

Samples without proper labelling cannot be processed.

9.4 Storage and Transport

- Keep samples at 2–8 °C immediately after collection.
- If refrigeration is not available, use an insulated cool box with ice packs and keep samples in the shade.
- If transport will be delayed more than 48 hours, freezing at −20 °C is acceptable for isolation and PCR testing. Not blood but yes serum.
- Transport samples within 24–48 hours to an authorized laboratory.
- Use triple packaging compliant with biohazard transport regulations.

10. Documentation

Complete the sampling form including:

- Farm, market, or herd of origin
- Trader or owner information if available
- Age, sex, and breed
- Clinical history if known
- Description of lesions
- Number of animals in the batch
- Name and signature of OV or supervising veterinarian

11. Laboratory Tests

According to national or reference laboratory protocols:

- PCR for *Mycoplasma mycoides subsp. mycoides*
- Bacterial culture
- Histopathology
- Serology (CFT, ELISA)

12. Reporting

- The laboratory reports results to the OV and competent veterinary authority.
- Suspected or confirmed positive cases must follow national notifiable disease procedures immediately.

13. Waste Disposal

- Dispose of biological waste according to abattoir biohazard policy.
- Disinfect reusable tools after sampling.
- Remove PPE safely and wash hands thoroughly.

14. References

- WOAH Terrestrial Code : CBPP - WOAH
- WOAH Terrestrial Manual : CBPP - WOAH
- FAO – OIE – AU/IBAR – IAEA Consultative Group on Contagious Bovine Pleuropneumonia, Third meeting *"Towards Sustainable CBPP Control Programmes For Africa"*, Rome, 12–14 November 2003. FAO Animal Health and Production Paper 3 (English).
- FAO CBPP Surveillance Manual : Recognizing contagious bovine pleuropneumonia (Revised Edition) (2002) FAO Animal Health Manual – 13 Rev.1

19. APPENDIX (CBPP AND DIFFERENTIAL DIAGNOSIS PHOTOS COLLECTIONS, TEMPLATE FOR CBPP GROSS LESIONS RECORD AND INSTRUCTIONS REGARDING VETERINARY REMOTE ASSISTANCE)

- **APPENDIX 1** — CBPP gross lesions at different stages: photo collection : https://rr-africa.woah.org/app/uploads/2026/02/Appendix1CBPPGrosslesionsScacchia2.pdf

- **APPENDIX 2** — CBPP Differential diagnosis: photo collection : https://rr-africa.woah.org/app/uploads/2026/02/Appendix2CBPPDifferentialDiagnosisScacchia.pdf

- **APPENDIX 3** — CBPP lung lesions : score system : https://rr-africa.woah.org/app/uploads/2026/02/Appendix3CBPPLunglesionscoresystem.pdf

- **APPENDIX 4** — Veterinary remote assistance, telediagnosis : https://rr-africa.woah.org/app/uploads/2026/02/Appendix4CBPPVeterinaryRemoteAssistance.pdf

GF-TADs

GLOBAL FRAMEWORK FOR THE PROGRESSIVE CONTROL OF TRANSBOUNDARY ANIMAL DISEASES

Food and Agriculture Organization of the United Nations

World Organisation for Animal Health
Founded as OIE

World Organisation for Animal Health