

CHAPTER 11.5.

INFECTION WITH *MYCOPLASMA MYCOIDES* SUBSP. *MYCOIDES SC* (CONTAGIOUS BOVINE PLEUROPNEUMONIA)

Article 11.5.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for contagious bovine pleuropneumonia (CBPP) shall be six months.

For the purposes of this chapter, a case of CBPP means an animal infected with *Mycoplasma mycoides* subspecies *mycoides SC* (*MmmSC*), and freedom from CBPP means freedom from *MmmSC infection*.

For the purposes of this chapter, susceptible animals include bovids (*Bos indicus*, *B. taurus* and *B. grunniens*) and water buffaloes (*Bubalus bubalis*).

For the purposes of *international trade*, this chapter deals not only with the occurrence of clinical signs caused by *MmmSC*, but also with the presence of *infection with MmmSC* in the absence of clinical signs.

The following defines the occurrence of *MmmSC infection*:

- 1) *MmmSC* has been isolated and identified as such from an animal, semen, oocytes or embryos; or
- 2) antibodies to *MmmSC* antigens which are not the consequence of *vaccination*, or *MmmSC* deoxyribonucleic acid have been detected in one or more animals showing pathological lesions consistent with *infection with MmmSC* with or without clinical signs, and epidemiological links to a confirmed *outbreak* of CBPP in susceptible animals.

When authorising import or transit of the *commodities* listed in this chapter, with the exception of those listed in Article 11.5.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the CBPP status of the domestic bovids and water buffalo population of the *exporting country, zone or compartment*.

Standards for diagnostic tests and vaccines are described in the *Terrestrial Manual*.

Article 11.5.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any CBPP-related conditions, regardless of the CBPP status of the domestic bovids and water buffalo population of the *exporting country, zone or compartment*:

- 1) *milk* and *milk products*;
- 2) hides and skins;
- 3) *meat* and *meat products* (excluding lung).

Article 11.5.3.

CBPP free country or zone

To qualify for inclusion in the existing list of CBPP free countries and *zones*, a Member Country should:

- 1) have a record of regular and prompt animal disease reporting;
- 2) send a declaration to the OIE stating that:
 - a) there has been no *outbreak* of CBPP during the past 24 months;
 - b) no evidence of CBPP *infection* has been found during the past 24 months;

- c) no *vaccination* against CBPP has been carried out during the past 24 months, and supply documented evidence that *surveillance* for CBPP in accordance with this chapter is in operation and that regulatory measures for the prevention and control of CBPP have been implemented;
- 3) not have imported since the cessation of *vaccination* any animals vaccinated against CBPP.

The country or *zone* will be included in the list only after the submitted evidence has been accepted by the OIE. Retention on the list requires that the information in points 2(a), 2(b), 2(c) and 3 above be re-submitted annually and changes in the epidemiological situation or other significant events should be reported to the OIE in accordance with the requirements in Chapter 1.1.

Article 11.5.4.

Recovery of free status

When a CBPP *outbreak* occurs in a CBPP free country or *zone*, one of the following waiting periods is required to regain the status of CBPP free country or *zone*:

- 1) 12 months after the last case where a *stamping-out policy* and serological *surveillance* and strict movement control are applied in accordance with this chapter;
- 2) if *vaccination* was used, 12 months after the *slaughter* of the last vaccinated animal.

Where a *stamping-out policy* is not practised, the above waiting periods do not apply but Article 11.5.3. applies.

Article 11.5.5.

CBPP infected country or zone

When the requirements for acceptance as a CBPP free country or *zone* are not fulfilled, a country or *zone* shall be considered as infected.

Article 11.5.6.

CBPP free compartment

The bilateral recognition of a CBPP free *compartment* should follow the principles laid down in this chapter and in Chapters 4.4. and 4.5.

Article 11.5.7.

Recommendations for importation from CBPP free countries or zones, or from CBPP free compartments

For domestic bovids and water buffaloes

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

- 1) showed no clinical sign of CBPP on the day of shipment;
- 2) were kept in a CBPP free country, *zone* or *compartment* since birth or for at least the past six months.

Article 11.5.8.

Recommendations for importation from CBPP infected countries or zones

For domestic bovids and water buffaloes for slaughter

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the animals:

- 1) showed no clinical sign of CBPP on the day of shipment;
- 2) originate from an *establishment* where no case of CBPP was officially reported for the past six months; and
- 3) are transported directly to the *slaughterhouse/abattoir* in sealed *vehicles*.

Article 11.5.9.

Recommendations for importation from CBPP free countries or zones, or from CBPP free compartments

For bovine semen

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

- 1) the donor animals:
 - a) showed no clinical sign of CBPP on the day of collection of the semen;
 - b) were kept in a CBPP free country, *zone* or *compartment* since birth or for at least the past six months;
- 2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 11.5.10.

Recommendations for importation from CBPP infected countries

For bovine semen

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

- 1) the donor animals:
 - a) showed no clinical sign of CBPP on the day of collection of the semen;
 - b) were subjected to the complement fixation test for CBPP with negative results, on two occasions, with an interval of not less than 21 days and not more than 30 days between each test, the second test being performed within 14 days prior to collection;
 - c) were isolated from other domestic bovids and water buffaloes from the day of the first complement fixation test until collection;
 - d) were kept since birth, or for the past six months, in an *establishment* where no case of CBPP was reported during that period, and that the *establishment* was not situated in a CBPP infected *zone*;
 - e) AND EITHER:
 - i) have not been vaccinated against CBPP;OR
 - ii) were vaccinated using a vaccine complying with the standards described in the *Terrestrial Manual* not more than four months prior to collection; in this case, the condition laid down in point (b) above is not required;
- 2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 11.5.11.

Recommendations for importation from CBPP free countries or zones, or from CBPP free compartments

For *in vivo* derived or *in vitro* produced oocytes or embryos of domestic bovids and water buffaloes

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

- 1) the donor animals:
 - a) showed no clinical sign of CBPP on the day of collection of the oocytes or embryos;
 - b) were kept in a CBPP free country, *zone* or *compartment* since birth or for at least the past six months;
- 2) the oocytes were fertilised with semen meeting the conditions of Article 11.5.9.;
- 3) the oocytes or embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant.

Article 11.5.12.

Recommendations for importation from CBPP infected countries

For *in vivo* derived or *in vitro* produced oocytes or embryos of domestic bovids and water buffaloes

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that:

- 1) the donor animals:
 - a) showed no clinical sign of CBPP on the day of collection of the oocytes or embryos;
 - b) were subjected to the complement fixation test for CBPP with negative results, on two occasions, with an interval of not less than 21 days and not more than 30 days between each test, the second test being performed within 14 days prior to collection;
 - c) were isolated from other domestic bovids and water buffaloes from the day of the first complement fixation test until collection;
 - d) were kept since birth, or for the past six months, in an *establishment* where no case of CBPP was reported during that period, and that the *establishment* was not situated in a CBPP infected zone;
 - e) AND EITHER:
 - i) have not been vaccinated against CBPP;
 - OR
 - ii) were vaccinated using a vaccine complying with the standards described in the *Terrestrial Manual* not more than four months prior to collection; in this case, the condition laid down in point (b) above is not required;
- 2) the oocytes were fertilised with semen meeting the conditions of Article 11.5.10.;
- 3) the oocytes or embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant.

Article 11.5.13.

Introduction to surveillance

Articles 11.5.13. to 11.5.17. define the principles and provide a guide for the *surveillance* of CBPP in accordance with Chapter 1.4. applicable to Member Countries seeking establishment of freedom from CBPP. Guidance is provided for Member Countries seeking reestablishment of freedom from CBPP for the entire country or for a *zone*, following an *outbreak* and for the maintenance of CBPP free status.

The impact and epidemiology of CBPP differ widely in different regions of the world and therefore it is impossible to provide specific recommendations for all situations. *Surveillance* strategies employed for demonstrating freedom from CBPP at an acceptable level of confidence should be adapted to the local situation. It is incumbent upon the applicant Member Country to submit a dossier to the OIE in support of its application that not only explains the epidemiology of CBPP in the region concerned but also demonstrates how all the risk factors are managed. This should include provision of scientifically-based supporting data. There is therefore considerable latitude available to Member Countries to provide a well-reasoned argument to prove that the absence of CBPP *infection* is assured at an acceptable level of confidence.

Surveillance for CBPP should be in the form of a continuing programme designed to establish that the whole territory or part of it is free from CBPP *infection*.

Article 11.5.14.

General conditions and methods for surveillance

- 1) A *surveillance* system in accordance with Chapter 1.4. should be under the responsibility of the *Veterinary Authority*. A procedure should be in place for the rapid collection and transport of samples from suspect cases of CBPP to a *laboratory* for CBPP diagnoses.
- 2) The CBPP *surveillance* programme should:
 - a) include an *early warning system* throughout the production, marketing and processing chain for reporting suspicious cases. Farmers and workers (such as community animal health workers) who have day-to-day contact with livestock, *meat* inspectors as well as *laboratory* diagnosticians, should report promptly any suspicion of CBPP. They should be integrated directly or indirectly (e.g. through private *veterinarians* or

veterinary paraprofessionals) into the *surveillance* system. All suspect cases of CBPP should be investigated immediately. Where suspicion cannot be resolved by epidemiological and clinical investigation, samples should be taken and submitted to a *laboratory*. This requires that sampling kits and other equipment are available for those responsible for *surveillance*. Personnel responsible for *surveillance* should be able to call for assistance from a team with expertise in CBPP diagnosis and control;

- b) implement, when relevant, regular and frequent clinical inspection and testing of high-risk groups of animals, such as those adjacent to a CBPP infected country or *zone* (for example, areas of transhumant production systems);
- c) take into consideration additional factors such as animal movement, different production systems, geographical and socio-economic factors that may influence the risk of disease occurrence.

An effective *surveillance* system will periodically identify suspicious cases that require follow-up and investigation to confirm or exclude that the cause of the condition is CBPP. The rate at which such suspicious cases are likely to occur will differ between epidemiological situations and cannot therefore be predicted reliably. Applications for freedom from CBPP *infection* should, in consequence, provide details of the occurrence of suspicious cases and how they were investigated and dealt with. This should include the results of *laboratory* testing and the control measures to which the animals concerned were subjected during the investigation (quarantine, movement stand-still orders, etc.).

Article 11.5.15.

Surveillance strategies

1. Introduction

The target population for *surveillance* aimed at identifying disease and *infection* should cover all the susceptible species (*Bos taurus*, *B. indicus*, *B. grunniens* and *Bubalus bubalis*) within the country or *zone*.

Given the limitations of the diagnostic tools available, the interpretation of *surveillance* results should be at the *herd* level rather than at the individual *animal* level.

Randomised *surveillance* may not be the preferred approach given the epidemiology of the disease (usually uneven distribution and potential for occult foci of *infection* in small populations) and the limited sensitivity and specificity of currently available tests. Targeted *surveillance* (e.g. based on the increased likelihood of *infection* in particular localities or species, focusing on *slaughter* findings, and active clinical *surveillance*) may be the most appropriate strategy. The applicant Member Country should justify the *surveillance* strategy chosen as adequate to detect the presence of CBPP *infection* in accordance with Chapter 1.4. and the epidemiological situation.

Targeted *surveillance* may involve testing of the entire target subpopulation or a sample from it. In the latter case the sampling strategy should incorporate an epidemiologically appropriate design prevalence. The sample size selected for testing should be large enough to detect *infection* if it were to occur at a predetermined minimum rate. The sample size and expected disease prevalence determine the level of confidence in the results of the survey. The applicant Member Country should justify the choice of design prevalence and confidence level based on the objectives of *surveillance* and the epidemiological situation, in accordance with Chapter 1.4. Selection of the design prevalence in particular should be clearly based on the prevailing or historical epidemiological situation.

Irrespective of the survey design selected, the sensitivity and specificity of the diagnostic tests employed are key factors in the design, sample size determination and interpretation of the results obtained. Ideally, the sensitivity and specificity of the tests used should be validated.

Irrespective of the *surveillance* system employed, the design should anticipate the occurrence of false positive reactions. If the characteristics of the testing system are known, the rate at which these false positives are likely to occur can be calculated in advance. There should be an effective procedure for following-up positives to ultimately determine with a high level of confidence, whether they are indicative of *infection* or not. This should involve follow-up with supplementary tests, clinical investigation and post-mortem examination in the original sampling unit as well as *herds* which may be epidemiologically linked to it.

2. Clinical surveillance

Clinical *surveillance* aims at detecting clinical signs of CBPP in a *herd* by close physical examination of susceptible animals. Clinical inspection is an important component of CBPP *surveillance* contributing to reach the desired level of confidence of detection of disease if a sufficiently large number of clinically susceptible animals is examined.

Clinical *surveillance* and *laboratory* testing should always be applied in series to clarify the status of CBPP suspects detected by either of these complementary diagnostic approaches. *Laboratory* testing and post-mortem examination may contribute to confirm clinical suspicion, while clinical *surveillance* may contribute to confirmation of positive serology. Any sampling unit within which suspicious animals are detected should be classified as infected until contrary evidence is produced.

3. Pathological surveillance

Systematic pathological *surveillance* for CBPP is the most effective approach and should be conducted at *slaughterhouses/abattoirs* and other *slaughter* facilities. Suspect pathological findings should be confirmed by agent identification. Training courses for *slaughter* personnel and *meat* inspectors are recommended.

4. Serological testing

Serological *surveillance* is not the preferred strategy for CBPP. However, in the framework of epidemiological investigations, serological testing may be used.

The limitations of available serological tests for CBPP make the interpretation of results difficult and useful only at the *herd* level. Positive findings should be followed up by clinical and pathological investigations and agent identification.

Clustering of seropositive reactions should be expected in CBPP *infections* and is usually accompanied by clinical signs. As clustering may signal field strain *infection*, the investigation of all instances should be incorporated in the *surveillance* strategy.

Following the identification of a CBPP infected *herd*, contact *herds* should be tested serologically. Repeated testing may be necessary to reach an acceptable level of confidence in *herd* classification.

5. Agent surveillance

Agent *surveillance* should be conducted to follow up and confirm or exclude suspect cases. Isolates should be typed to confirm *MmmSC*.

Article 11.5.16.

Countries or zones applying for recognition of freedom from CBPP

In addition to the general conditions described in this chapter, a Member Country applying for recognition of CBPP freedom for the country or a *zone* should provide evidence for the existence of an effective *surveillance* programme. The strategy and design of the *surveillance* programme depend on the prevailing epidemiological circumstances and should be planned and implemented in accordance with general conditions and methods in this chapter, to demonstrate absence of CBPP *infection*, during the preceding 24 months in susceptible populations. This requires the support of a national or other *laboratory* able to undertake identification of CBPP *infection*.

Article 11.5.17.

Countries or zones re-applying for recognition of freedom from CBPP following an outbreak

In addition to the general conditions described in this chapter, a Member Country re-applying for recognition of country or *zone* freedom from CBPP should show evidence of an active *surveillance* programme for CBPP, following the recommendations of this chapter.

Two strategies are recognised by the OIE in a programme to eradicate CBPP *infection* following an *outbreak*:

- 1) *slaughter* of all clinically affected and in-contact susceptible animals;
- 2) *vaccination* used without subsequent *slaughter* of vaccinated animals.

The time periods before which an application can be made for re-instatement of freedom from CBPP depends on which of these alternatives is followed. The time periods are prescribed in Article 11.5.4.

Article 11.5.18.

OIE endorsed official control programme for CBPP

The overall objective of an OIE endorsed *official control programme* for CBPP is for Member Countries to progressively improve their situation and eventually attain CBPP free status. The *official control programme* should be applicable to the entire country even if certain measures are directed towards defined subpopulations.

Member Countries may, on a voluntary basis, apply for endorsement of their *official control programme* for CBPP when they have implemented measures in accordance with this article.

For an *official control programme* for CBPP to be endorsed by the OIE, the Member Country should:

- 1) have a record of regular and prompt animal disease reporting in accordance with the requirements in Chapter 1.1.;
- 2) submit documented evidence of the capacity of *Veterinary Services* to control CBPP; this evidence can be provided by countries following the OIE PVS Pathway;
- 3) submit a detailed plan of the programme to control and eventually eradicate CBPP in the country or *zone* including:
 - a) the timeline;
 - b) the performance indicators for assessing the efficacy of the control measures to be implemented;
 - c) submit documentation indicating that the *official control programme* for CBPP has been implemented and is applicable to the entire territory;
- 4) submit a dossier on the epidemiology of CBPP in the country describing the following:
 - a) the general epidemiology in the country highlighting the current knowledge and gaps;
 - b) the measures to prevent introduction of *infection*, the rapid detection of, and response to, all CBPP *outbreaks* in order to reduce the incidence of CBPP *outbreaks* and to eliminate CBPP in at least one *zone* in the country;
 - c) the main livestock production systems and movement patterns of CBPP susceptible animals and their products within and into the country;
- 5) submit evidence that CBPP *surveillance* is in place,
 - a) taking into account provisions in Chapter 1.4. and the provisions on *surveillance* of this chapter;
 - b) have diagnostic capability and procedures, including regular submission of samples to a *laboratory* that carries out diagnosis and further characterisation of strains in accordance with the *Terrestrial Manual* including procedures to isolate and identify *M. mycoides* subsp. *mycoides* SC as opposed to *M. mycoides* subsp. *mycoides* LC;
- 6) where *vaccination* is practised as a part of the *official control programme* for CBPP, provide:
 - a) evidence (such as copies of legislation) that *vaccination* of selected populations is compulsory;
 - b) detailed information on *vaccination* campaigns, in particular on:
 - i) target populations for *vaccination*;
 - ii) monitoring of *vaccination* coverage;
 - iii) technical specification of the vaccines used and description of the licensing procedures in place;
 - iv) the proposed timeline and strategy for the cessation of *vaccination*;
- 7) provide an emergency preparedness and contingency response plan to be implemented in case of CBPP *outbreaks*.

The Member Country's *official control programme* for CBPP will be included in the list of programmes endorsed by the OIE only after the submitted evidence has been accepted by the OIE. Retention on the list requires an annual update on the progress of the *official control programme* and information on significant changes concerning the points above. Changes in the epidemiological situation and other significant events should be reported to the OIE in accordance with the requirements in Chapter 1.1.

The OIE may withdraw the endorsement of the *official control programme* if there is evidence of:

- non-compliance with the timelines or performance indicators of the programme; or
- significant problems with the performance of the *Veterinary Services*; or
- an increase in the incidence of CBPP that cannot be addressed by the programme.

NB: FIRST ADOPTED IN 1968; MOST RECENT UPDATE ADOPTED IN 2014.

