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CHAPTER 11.9.

**CONTAGIOUS BOVINE PLEUROPNEUMONIA**

Article 11.9.1.

**General provisions**

For the purposes of the *Terrestrial Code*, the *incubation period* for contagious bovine pleuropneumonia (CBPP) shall be 6 months.

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

For the purpose of this chapter, susceptible animals include domestic cattle (*Bos indicus* and *B. taurus*) and water buffalo (*Bubalus bubalis*).

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

The following defines the occurrence of *Mmm*SC infection:

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

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

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

Article 11.9.2.

**Trade in 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 cattle 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).

~~When authorising import or transit of other commodities listed in this chapter, Veterinary Authorities should require the conditions prescribed in this chapter relevant to the CBPP status of the domestic cattle and water buffalo population of the exporting country, zone or compartment.~~

#### Article 11.9.3.

#### **CBPP free country, zone or compartment**

To qualify for inclusion in the existing list of CBPP free countries, a Member 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 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 2a), 2b), 2c) and 3 above be re-submitted annually and changes in the epidemiological situation or other significant events should be reported to the OIE according to the requirements in Chapter 1.1.

#### Article 11.9.4.

#### **Recovery of free status**

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

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 11.9.3. applies.

## Article 11.9.5.

**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 11.9.6.

**Recommendations for importation from CBPP free countries, zones or compartments**for domestic cattle and water buffaloes

*Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the animals showed no clinical sign of CBPP on the day of shipment.

## Article 11.9.7.

**Recommendations for importation from CBPP infected countries or zones**for domestic cattle 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 6 months, and
3. are transported directly to the *slaughterhouse* in sealed *vehicles*.

## Article 11.9.8.

**Recommendations for importation from CBPP free countries, zones or 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 since birth or for at least the past 6 months;
2. the semen was collected, processed and stored in conformity with the provisions of Chapter 4.5. and Chapter 4.6.

## Article 11.9.9.

**Recommendations for importation from CBPP infected countries or zones**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 bovidae from the day of the first complement fixation test until collection;
  - d. were kept since birth, or for the past 6 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 4 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 conformity with the provisions of Chapter 4.5. and Chapter 4.6.

## Article 11.9.10.

**Recommendations for importation from CBPP free countries, zones or compartments**for *in vivo* derived or *in vitro* produced embryos/oocytes of bovidae

*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 embryos/oocytes;
  - b. were kept in a CBPP free country since birth or for at least the past 6 months;
2. the oocytes were fertilised with semen meeting the conditions of Article 11.9.8.;
3. the embryos/oocytes was collected, processed and stored in conformity with the provisions of Chapters 4.7., 4.8. and 4.9., as relevant.

## Article 11.9.11.

**Recommendations for importation from CBPP infected countries or zones**

for *in vivo* derived or *in vitro* produced embryos/oocytes of bovidae

*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 embryos/oocytes;
  - 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 bovidae from the day of the first complement fixation test until collection;
  - d. were kept since birth, or for the past 6 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 4 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 11.9.9.;
3. the embryos/oocytes was collected, processed and stored in conformity with the provisions of Chapters 4.7., 4.8. and 4.9., as relevant.

## Article 11.9.12.

**Surveillance: introduction**

Articles 11.9.12. to 11.9.17. define the principles and provides a guide for the *surveillance of for* CBPP in accordance with Chapter 1.4. applicable to Members seeking establishment of freedom from CBPP. Guidance is provided for Members seeking reestablishment of freedom from CBPP for the entire country or for a *zone* or *compartment*, 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 will need to be adapted to the local situation. It is incumbent upon the applicant Member 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 OIE Members 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 11.9.13.

### **Surveillance: general conditions and methods**

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 as described in the *Terrestrial Manual*.
  
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 para-professionals*) 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 *infected 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.).

## 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* and *Bubalus bubalis*) within the country, *zone* or *compartment*.

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 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 will need to incorporate an epidemiologically appropriate design prevalence. The sample size selected for testing will need to 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 must 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 clearly needs to be 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 needs to 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 will be 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* 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 epidemiologic investigations, serological testing may be used.

The limitations of available serological tests for CBPP will 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 will be usually accompanied by clinical signs. As clustering may signal field strain *infection*, the investigation of all instances must be incorporated in the *surveillance* strategy.

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

### 5. Agent surveillance

Agent *surveillance* using tests described in the *Terrestrial Manual* should be conducted to follow-up and confirm or exclude suspect *cases*. Isolates should be typed to confirm *MmmSC*.

Article 11.9.15.

## **Countries or zones applying for recognition of freedom from CBPP**

In addition to the general conditions described in this chapter, an OIE Member 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 will depend on the prevailing epidemiological circumstances and will be planned and implemented according to 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 using methods described in the *Terrestrial Manual*.

Article 11.9.16.

## **Compartments seeking recognition of freedom from CBPP**

The bilateral recognition of CBPP free *compartments* should follow the principles laid in this chapter, Chapter 4.3. and Chapter 4.4.

## Article 11.9.17.

**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 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 11.9.4.