CHAPTER 14.7.

INFECTION WITH PESTE DES PETITS RUMINANTS VIRUS

Article 14.7.1.

General provisions

Peste des petits ruminants (PPR) susceptible animals are primarily domestic sheep and goats although cattle, camels, buffaloes and some *wild* ruminant species can also be infected and may act as sentinels indicating the spill over of peste des petits ruminants virus (PPRV) from domestic small ruminants. Even if some *wild* small ruminants can be infective, only domestic sheep and goats play a significant epidemiological role.

For the purposes of the *Terrestrial Code*, PPR is defined as an *infection* of domestic sheep and goats with PPRV.

This chapter deals not only with the occurrence of clinical signs caused by PPRV, but also with the presence of *infection* with PPRV in the absence of clinical signs.

The following defines the occurrence of PPRV *infection*:

1) PPRV, excluding vaccine strains, has been isolated and identified as such from a domestic sheep or goat or a product derived from it; or

2) antigen or ribonucleic acid specific to PPRV, excluding vaccine strains, has been identified in samples from a domestic sheep or goat showing clinical signs consistent with PPR, or epidemiologically linked to an *outbreak* of PPR, or giving cause for suspicion of association or contact with PPR; or

3) antibodies to PPRV antigens which are not the consequence of *vaccination*, have been detected in a domestic sheep or goat with either epidemiological links to a confirmed or suspected *outbreak* of PPR or showing clinical signs consistent with recent *infection* of PPRV.

For the purposes of the *Terrestrial Code*, the *incubation period* for PPR shall be 21 days.

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

Article 14.7.2.

Safe commodities

When authorising import or transit through their territory of semi-processed hides and skins (limed hides, pickled pelts, and semi-processed leather, e.g. wet blue and crust leather) which have been submitted to the usual chemical and mechanical processes in use in the tanning industry, *Veterinary Authorities* should not require any PPR-related conditions regardless of PPR status of the *exporting country* or *zone*.

Article 14.7.3.

Country or zone free from PPR

A country or *zone* may be considered free from PPR when the relevant provisions in point 2 of Article 1.4.6. have been complied with, and when within the proposed free country or *zone* for at least the past 24 months:

1) there has been no *case* of *infection* with PPRV;

2) the *Veterinary Authority* has current knowledge of, and authority over, all domestic sheep and goats in the country or *zone*;
3) appropriate *surveillance* has been implemented in accordance with:
   a) Article 1.4.6. where historical freedom can be demonstrated; or
   b) Articles 14.7.27. to 14.7.33. where historical freedom cannot be demonstrated;
4) measures to prevent the introduction of the *infection* have been in place: in particular, the importations or movements of *commodities* into the country or *zone* have been carried out in accordance with this chapter and other relevant chapters of the *Terrestrial Code*;
5) no *vaccination* against PPR has been carried out;
6) no animals vaccinated against PPR have been introduced since the cessation of *vaccination*.

The country or *zone* will be included in the list of countries or *zones* free from PPR in accordance with Chapter 1.6.

Retention on the list requires annual reconfirmation of compliance with all points above and relevant provisions under point 4 of Article 1.4.6. Documented evidence should be resubmitted annually for points 1 to 4 above. Any changes in the epidemiological situation or other significant events should be notified to the OIE in accordance with Chapter 1.1.

Article 14.7.4.

PPR free compartment

A PPR free *compartment* can be established in either a PPR free country or *zone* or in an infected country or *zone*. In defining such a *compartment* the principles of Chapters 4.4. and 4.5. should be followed. Domestic sheep and goats in the PPR free *compartment* should be separated from any other susceptible animals by the application of an effective *biosecurity* management system.

A Member Country wishing to establish a PPR free *compartment* should:

1) have a record of regular and prompt animal disease reporting and if not PPR free, have an *official control programme* and a *surveillance* system for PPR in place in accordance with Articles 14.7.27. to 14.7.33. that allows an accurate knowledge of the prevalence of PPR in the country or *zone*;
2) declare for the PPR free *compartment* that:
   a) there has been no *outbreak* of PPR during the past 24 months;
   b) no evidence of PPRV *infection* has been found during the past 24 months;
   c) *vaccination* against PPR is prohibited;
   d) no small ruminant in the *compartment* has been vaccinated against PPR within the past 24 months;
   e) animals, semen and embryos only enter the *compartment* in accordance with relevant articles in this chapter;
   f) documented evidence shows that *surveillance* in accordance with Articles 14.7.27. to 14.7.33. is in place;
   g) an *animal identification* and *traceability* system in accordance with Chapters 4.2. and 4.3. is in place;
3) describe in detail the animal subpopulation in the *compartment* and the *biosecurity plan* for PPRV *infection*.

The *compartment* should be approved by the *Veterinary Authority*.

Article 14.7.5.

PPRV infected country or zone

A country or *zone* shall be considered as PPRV infected when the requirements for acceptance as a PPR free country or *zone* are not fulfilled.

Article 14.7.6.

Establishment of a containment zone within a PPR free country or zone

In the event of limited *outbreaks* within a PPR free country or *zone*, including within a *protection zone*, a single *containment zone*, which includes all *cases*, can be established for the purposes of minimising the impact on the entire country or *zone*.

For this to be achieved and for the Member Country to take full advantage of this process, the *Veterinary Authority* should submit documented evidence as soon as possible to the OIE that:

1) the *outbreaks* are limited based on the following factors:
   a) immediately on suspicion, a rapid response including *notification* has been made;
   b) standstill of animal movements has been imposed, and effective controls on the movement of other *commodities* mentioned in this chapter are in place;
   c) epidemiological investigation (trace-back, trace-forward) has been completed;
   d) the *infection* has been confirmed;
   e) the primary *outbreak* has been identified, and investigations on the likely source of the *outbreak* have been carried out;
   f) all *cases* have been shown to be epidemiologically linked;
   g) no new *cases* have been found in the *containment zone* with a minimum of two *incubation periods* as defined in Article 14.7.1. after the stamping-out of the last detected *case* is completed;
2) a *stamping-out policy* has been applied;
3) the susceptible animal population within the *containment zones* is clearly identifiable as belonging to the *containment zone*;
4) increased passive and targeted *surveillance* in accordance with Articles 14.7.27. to 14.7.33. in the rest of the country or *zone* has not detected any evidence of *infection*;
5) animal health measures that effectively prevent the spread of the PPRV to the rest of the country or *zone*, taking into consideration physical and geographical barriers, are in place;
6) ongoing *surveillance* is in place in the *containment zone*.

The free status of the areas outside the *containment zone* is suspended while the *containment zone* is being established. The free status of these areas may be reinstated irrespective of Article 14.7.7., once the *containment zone* is clearly established, by complying with points 1 to 6 above. It should be demonstrated that *commodities* for *international trade* have originated outside the *containment zone*.

The recovery of the PPR free status of the *containment zone* should follow Article 14.7.7.

Article 14.7.7.

Recovery of free status

Should an *outbreak* of PPR occur in a previously free country or *zone*, its status may be recovered six months after the *disinfection* of the last affected *establishment*, provided that:

1) a *stamping-out policy* has been implemented;
2) *surveillance* in accordance with Article 14.7.32. has been carried out with negative results.

Otherwise, Article 14.7.3. applies.

The PPR free status of the country or *zone* will be reinstated only after the submitted evidence has been accepted by the OIE.

Article 14.7.8.

Recommendations for importation from PPR free countries or zones

For domestic sheep and goats

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

1) showed no clinical sign of PPR on the day of shipment;
2) were kept in a PPR free country or *zone* since birth or for at least the past 21 days.

Article 14.7.9.

Recommendations for importation from PPR free countries or zones

For wild ruminants

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

1) showed no clinical sign suggestive of PPRV *infection* on the day of shipment;
2) come from a PPR free country or *zone*;
3) if the country or *zone* of origin has a common border with a country considered infected with PPRV:
   a) were captured at a distance from the border that precludes any contact with animals in an infected country, the distance should be defined in accordance with the biology of the species exported, including home range and long distance movements;

   OR

   b) were kept in a *quarantine station* for at least 21 days prior to shipment.

Article 14.7.10.

Recommendations for importation from countries or zones considered infected with PPRV

For domestic sheep and goats

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

1) showed no clinical sign suggestive of PPRV *infection* for at least the 21 days prior to shipment;
2) either:
   a) were kept since birth, or for at least the 21 days prior to shipment, in an *establishment* where no *case* of PPR was reported during that period, and that the *establishment* was not situated in a PPRV infected *zone*; or
   b) were kept in a *quarantine station* for at least the 21 days prior to shipment;
3) either:
   a) were not vaccinated against PPR and were submitted to a diagnostic test for PPRV *infection* with negative result no more than 21 days prior to shipment; or
   b) were vaccinated against PPR with live attenuated PPRV vaccines at least 21 days prior to shipment.

Article 14.7.11.

Recommendations for importation from countries or zones considered infected with PPRV

For wild ruminants

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

1) showed no clinical sign suggestive of PPRV *infection* for at least the 21 days prior to shipment;
2) were submitted to a diagnostic test for PPRV *infection* with negative results no more than 21 days prior to shipment;
3) were kept in a *quarantine station* for at least the 21 days prior to shipment.

Article 14.7.12.

Recommendations for importation from PPR free countries or zones

For semen of domestic sheep and goats

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

1) showed no clinical sign of PPR on the day of the collection of the semen and during the following 21 days;

2) were kept in a PPR free country or *zone* for at least the 21 days prior to collection.

Article 14.7.13.

Recommendations for importation from countries or zones considered infected with PPRV

For semen of domestic sheep and goats

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

1) showed no clinical sign suggestive of PPRV *infection* for at least the 21 days prior to collection of the semen and during the following 21 days;

2) were kept, for at least the 21 days prior to collection, in an *establishment* or *artificial insemination centre* where no *case* of PPR was reported during that period, which was not situated in a PPRV infected *zone* and to which no animals had been added during the 21 days prior to collection;

3) were not vaccinated against PPR and were submitted to a diagnostic test for PPRV *infection* with negative results at least 21 days prior to collection of the semen;

OR

4) were vaccinated against PPR with live attenuated PPRV vaccines at least 21 days prior to semen collection.

Article 14.7.14.

Recommendations for importation from PPR free countries or zones

For embryos of domestic sheep and goats and captive wild ruminants

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

1) the donor animals were kept in an *establishment* located in a PPR free country or *zone* at least 21 days prior to embryo collection;
2) the embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant;
3) semen of domestic sheep and goats used to fertilise the oocytes complies at least with the requirements in Article 14.7.12. or Article 14.7.13.

Article 14.7.15.

Recommendations for importation from countries or zones considered infected with PPRV

For embryos of domestic sheep and goats

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

1) the donor animals:
    a) and all other animals in the *establishment* showed no clinical sign suggestive of PPRV *infection* at the time of collection and during the following 21 days;
    b) were kept, for at least the 21 days prior to collection, in an *establishment* where no *case* of PPR was reported during that period, and to which no susceptible animals had been added during the 21 days prior to collection;
    c) were not vaccinated against PPR and were subjected to a diagnostic test for PPRV *infection* with negative results at least 21 days prior to collection;

    OR

    d) were vaccinated against PPR with live attenuated PPRV vaccines at least 21 days prior to embryo collection;
2) the embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant;
3) semen of domestic sheep and goats used to fertilise the oocytes complies at least with the requirements in Article 14.7.12. or Article 14.7.13.

Article 14.7.16.

Recommendations for importation from countries or zones considered infected with PPRV

For embryos of captive wild ruminants

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

1) the donor animals:
   a) showed no clinical sign suggestive of *infection* with PPRV for at least the 21 days prior to embryo collection;
   b) were not vaccinated against PPR and were subjected to a diagnostic test for PPRV *infection* with negative results at least 21 days prior to collection;
   c) were kept, for at least the 21 days prior to collection, in an *establishment* where no *case* of PPR or of *infection* with PPRV was reported during that period, and to which no susceptible animals had been added during the 21 days prior to collection;
2) the embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant.

Article 14.7.17.

Recommendations for importation of fresh meat and meat products from sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *meat* comes from animals which:

1) showed no clinical sign of PPR within 24 hours before *slaughter*;
2) have been slaughtered in an approved *slaughterhouse/abattoir* and have been subjected to ante- and post-mortem inspections with favourable results.

Article 14.7.18.

Recommendations for importation from PPR free countries or zones

For milk and milk products from sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products come from animals which have been kept in a PPR free country or *zone* for at least the 21 days prior to milking.

Article 14.7.19.

Recommendations for importation from countries or zones considered infected with PPRV

For milk from sheep and goats

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

1) the *milk*:
   a) originates from *flocks* which were not subjected to any restrictions due to PPR at the time of *milk* collection;

   OR

   b) has been processed to ensure the destruction of the PPRV in accordance with one of the procedures referred to in Articles 8.8.35. and 8.8.36.;
2) the necessary precautions were taken to avoid contact of the products with any potential source of PPRV.

Article 14.7.20.

Recommendations for importation from countries or zones considered infected with PPRV

For milk products from sheep and goats

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

1) these products are derived from *milk* complying with the requirements of Article 14.7.19.;
2) the necessary precautions were taken after processing to avoid contact of the *milk products* with any potential source of PPRV.

Article 14.7.21.

Recommendations for importation from PPR free countries or zones

For products of sheep and goats, other than milk, fresh meat and their products

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

1) which have been kept in a PPR free country or *zone* since birth or for at least the past 21 days;
2) which have been slaughtered in an approved *slaughterhouse/abattoir* and have been subjected to ante- and post-mortem inspections with favourable results.

Article 14.7.22.

Recommendations for importation from countries or zones considered infected with PPRV

For meal and flour from blood, meat, defatted bones, hooves, claws and horns from sheep and goats

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

1) the products were processed using heat treatment to a minimum internal temperature of 70°C for at least 30 minutes;
2) the necessary precautions were taken after processing to avoid contact of the *commodities* with any potential source of PPRV.

Article 14.7.23.

Recommendations for importation from countries or zones considered infected with PPRV

For hooves, claws, bones and horns, hunting trophies and preparations destined for museums from sheep and goats

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

1) the products were completely dried and had no trace on them of skin, flesh or tendon or were adequately disinfected; and
2) the necessary precautions were taken after processing to avoid contact of the *commodities* with any potential source of PPRV.

Article 14.7.24.

Recommendations for importation from countries or zones infected with PPRV

For wool, hair, raw hides and skins from sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the products were processed in accordance with one of the following, in premises controlled and approved by the *Veterinary Authority* of the *exporting country*:

1. For wool and hair:
   a) industrial washing, which consists of the immersion of the wool in a series of baths of water, soap and sodium hydroxide (soda) or potassium hydroxide (potash);
   b) chemical depilation by means of slaked lime or sodium sulphide;
   c) fumigation with formaldehyde in a hermetically sealed chamber for at least 24 hours;
   d) industrial scouring which consists of the immersion of wool in a water-soluble detergent held at 60-70°C;
   e) storage of wool at 4°C for four months, 18°C for four weeks or 37°C for eight days.

2. For raw hides and skins:
   a) treatment for at least 28 days with salt (NaCl) containing 2% sodium carbonate (Na_2CO_3).

And

The necessary precautions were taken after processing to avoid contact of the *commodities* with any potential source of PPRV.

Article 14.7.25.

Recommendations for importation from countries or zones considered infected with PPRV

For products of animal origin from sheep and goats intended for pharmaceutical or surgical use

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

1) come from animals which were slaughtered in an approved *slaughterhouse/abattoir* and have been subjected to ante- and post-mortem inspections with favourable results;
2) were processed to ensure the destruction of the PPRV in accordance with one of the procedures referred to in Article 8.8.26. or in Articles 8.8.31. to 8.8.34. as appropriate and in premises controlled and approved by the *Veterinary Authority* of the *exporting country*.

Article 14.7.26.

Procedures for the inactivation of the PPRV in casings of sheep and goats

For the inactivation of PPRV in *casings* of sheep and goats, the following procedures should be used: treatment for at least 30 days either with dry salt (NaCl) or with saturated brine (a_w< 0.80), or with phosphate supplemented salt containing 86.5% NaCl, 10.7% Na_2HPO_4 and 2.8% Na_3PO_4 (weight/weight/weight), either dry or as a saturated brine (a_w< 0.80), and kept at a temperature of 20°C or more during this entire period.

Article 14.7.27.

Introduction to surveillance

Articles 14.7.27. to 14.7.33. define the principles and provide a guide for the *surveillance* of PPR in accordance with Chapter 1.4. applicable to Member Countries seeking recognition of country or zonal freedom from PPR. Guidance is provided for Member Countries seeking reestablishment of freedom following an *outbreak* and for the maintenance of PPR free status.

Surveillance strategies employed for demonstrating freedom from PPR at an acceptable level of confidence should be adapted to the local situation. *Outbreaks* of PPR may vary in severity with differing clinical presentations believed to reflect variations in host resistance and variations in the virulence of the attacking strain. Experience has shown that *surveillance* based on a predefined set of clinical signs (e.g. searching for 'pneumo-enteritis syndrome') increases the sensitivity of the system. In the case of peracute cases the presenting sign may be sudden death. In the case of sub-acute (mild) cases, clinical signs are displayed irregularly and are difficult to detect.

Where they exist, susceptible domestic species, and *feral* populations of these species, should be included in the design of the *surveillance* strategy.

Surveillance for PPR should be in the form of a continuing programme designed to establish that the whole country or *zone* is free from PPRV *infection*.

Article 14.7.28.

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 suspected *cases* to a *laboratory* for PPR diagnosis.

2) The PPR *surveillance* programme should:

   a) include an *early warning system* throughout the production, marketing and processing chain for reporting suspected *cases*. Farmers and workers who have day-to-day contact with livestock, as well as diagnosticians, should report promptly any suspicion of PPR. They should be supported directly or indirectly (e.g. through private *veterinarians* or *veterinary paraprofessionals*) by government information programmes and the *Veterinary Authority*. All significant epidemiological events consistent with PPR, such as pneumo-enteritis syndrome, should be reported and 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 be available to those responsible for *surveillance*. Personnel responsible for *surveillance* should be able to call for assistance from a team with expertise in PPR diagnosis and control;

   b) implement, when relevant, regular and frequent clinical inspection and serological testing of high-risk groups of animals, such as those adjacent to a PPRV infected country.

An effective *surveillance* system will periodically identify animals with signs suggestive of PPR that require follow-up and investigation to confirm or exclude that the cause of the condition is PPRV. The rate at which such suspected *cases* are likely to occur will differ between epidemiological situations and cannot therefore be predicted reliably. Applications for freedom from PPRV *infection* should, in consequence, provide details of the occurrence of suspected *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 14.7.29.

Surveillance strategies

1. Clinical surveillance

   Clinical *surveillance* aims to detect clinical signs of PPR by close physical examination. Clinical *surveillance* and epidemiological investigations are the cornerstone of all *surveillance* systems and should be supported by additional strategies such as virological and serological *surveillance*. Clinical *surveillance* may be able to provide a high level of confidence of detection of disease if sufficiently large numbers of clinically susceptible animals are examined. It is essential that clinical *cases* detected be followed up by the collection of appropriate samples such as ocular and nasal swabs, blood or other tissues for virus isolation or virus detection by other means. Sampling units within which suspicious animals are detected should be classified as infected until fully investigated.

   Active search for clinical disease can include participatory disease searching, tracing backwards and forwards, and follow-up investigations. Participatory *surveillance* is a form of targeted active *surveillance* based upon methods to capture livestock owners' perceptions on the prevalence and patterns of disease.

   The labour requirements and the logistical difficulties involved in conducting clinical examinations should be taken into account.

   PPRV isolates may be sent to an OIE Reference Laboratory for further characterisation.

2. Virological surveillance

   Given that PPR is an acute *infection* with no known carrier state, virological *surveillance* should only be conducted as a follow-up to clinically suspected *cases*.

3. Serological surveillance

Serological *surveillance* aims to detect antibodies against PPRV. Positive antibody test results can have four possible causes:

a) natural *infection* with PPRV;

b) *vaccination* against PPR;

c) maternal antibodies derived from an immune dam (maternal antibodies in small ruminants can be found only up to six months of age);

d) heterophile (cross) and other non-specific reactions.

It may be possible to use serum collected for other survey purposes for PPR *surveillance*. However, the principles of survey design described in this chapter and the requirement for a statistically valid survey for the presence of PPRV should not be compromised.

The discovery of clustering of seropositive reactions should be foreseen. It may reflect any of a series of events, including but not limited to the demographics of the population sampled, vaccinal exposure or the presence of field strain *infection*. As clustering may signal field strain *infection*, the investigation of all instances must be incorporated in the survey design.

The results of random or targeted serological surveys are important in providing reliable evidence that PPRV *infection* is not present in a country or *zone*. It is therefore essential that the survey be adequately documented.

Article 14.7.30.

Surveillance in wildlife

Where a population of a susceptible *wildlife* species may act as sentinels indicating the spill over of PPRV from domestic sheep and goats, serosurveillance data should be collected.

Obtaining meaningful data from *surveillance* in *wildlife* can be enhanced by close coordination of activities in a region. Both purposive and opportunistic samplings are used to obtain material for analysis in national or reference *laboratories*. The latter are required because many countries do not have adequate facilities to perform the full testing protocol for detecting antibodies against PPRV in *wildlife* sera.

Targeted sampling is the preferred method to provide *wildlife* data to evaluate the status of *infection* with PPRV. In reality, the capacity to perform *wildlife* sampling is minimal in most countries. However, samples can be obtained from hunted animals, and these may provide useful background information.

Article 14.7.31.

Additional surveillance requirements for Member Countries applying for OIE recognition of PPR free status

The strategy and design of the *surveillance* programme will depend on the prevailing epidemiological circumstances in and around the country or *zone* and should be planned and implemented in accordance with the conditions for status recognition described in Article 14.7.3. and methods in this chapter, to demonstrate absence of PPRV *infection* during the preceding 24 months. This requires the support of a *laboratory* able to undertake identification of PPRV *infection* through virus, antigen or viral nucleic acid detection and antibody tests.

The target population for *surveillance* aimed at identifying disease and *infection* should cover significant populations within the country or *zone* to be recognised as free from PPRV *infection*.

The strategy employed should be based on an appropriate combination of randomised and targeted sampling requiring *surveillance* consistent with demonstrating the absence of PPRV *infection* at an acceptable level of statistical confidence. The frequency of sampling should be dependent on the epidemiological situation. *Risk*-based approaches (e.g. based on the increased likelihood of *infection* in particular localities or species) may be appropriate to refine the *surveillance* strategy. The Member Country should justify the *surveillance* strategy chosen as adequate to detect the presence of PPRV *infection* in accordance with Chapter 1.4. and the epidemiological situation. It may, for example, be appropriate to target clinical *surveillance* at particular subpopulations likely to exhibit clear clinical signs.

Consideration should be given to the risk factors for the presence of PPRV, including:

1) historical disease patterns;

2) critical population size, structure and density;

3) livestock husbandry and farming systems;

4) movement and contact patterns, such as market and other trade-related movements;

5) virulence and infectivity of the strain.

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 predetermined minimum disease prevalence determine the level of confidence in the results of the survey. The applicant Member Country should justify the choice of design, minimum prevalence and confidence level based on the objectives of *surveillance* and the epidemiological situation, in accordance with Chapter 1.4. Selection of the minimum prevalence in particular should 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.

Irrespective of the testing system employed, *surveillance* 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 subsequently determine with a high level of confidence, whether they are indicative of *infection* or not. This should involve both supplementary tests and follow-up investigation to collect diagnostic material from the original sampling unit as well as *herds* or *flocks* which may be epidemiologically linked to it.

The principles involved in *surveillance* for disease or *infection* are technically well defined in Chapter 1.4. The design of *surveillance* programmes to demonstrate the absence of PPRV *infection* should be carefully followed to ensure the reliability of results. The design of any *surveillance* programme, therefore, requires inputs from professionals competent and experienced in this field.

Article 14.7.32.

Additional surveillance requirements for recovery of free status

Following an *outbreak* of PPR in a Member Country at any time after recognition of PPR freedom, the origin of the virus strain should be thoroughly investigated. In particular it is important to determine if this is due to the re-introduction of virus or re-emergence from an undetected focus of *infection*. Ideally, the virus should be isolated and compared with historical strains from the same area as well as those representatives of other possible sources.

After elimination of the *outbreak*, a Member Country wishing to regain the free status should undertake *surveillance* in accordance with this chapter to demonstrate the absence of PPRV *infection*.

Article 14.7.33.

The use and interpretation of serological tests for serosurveillance of PPR

Serological testing is an appropriate tool to use for PPR *surveillance* where *vaccination* has not been practised. There is only one serotype of virus and the tests will detect antibodies elicited by *infection* with all PPRV but the tests cannot discriminate between antibodies against field *infection* and those from *vaccination* with attenuated vaccines. This fact compromises serosurveillance in vaccinated populations and meaningful serosurveillance can only commence once *vaccination* has ceased for several years. Antibodies against virulent and vaccine strains of PPRV can be detected in small ruminants from about 14 days post *infection* or *vaccination* and peak around 30 to 40 days. Antibodies then persist for many years, possibly for life, although titres decline with time.

It is necessary to demonstrate that positive serological results have been adequately investigated.

Article 14.7.34.

OIE endorsed official control programme for PPR

A Member Country may, on a voluntary basis, apply for endorsement of its *official control programme* for PPR in accordance with Chapter 1.6., when it has implemented measures in accordance with this article.

For a Member Country's *official control programme* for PPR to be endorsed by the OIE, the Member Country should provide a detailed *official control programme* for the control and eventual eradication of PPR in the country or *zone*. This document should address and provide documented evidence on the following:

1) epidemiology:

   a) the detailed epidemiological situation of PPR in the country, highlighting the current knowledge and gaps;

   b) the main production systems and movement patterns of sheep and goats and their products within and into the country and, where applicable, the specific *zone*;

2) *surveillance* and diagnostic capabilities:

   a) PPR *surveillance* in place, in accordance with Chapter 1.4. and Articles 14.7.27. to 14.7.33.;

   b) diagnostic capability and procedures, including regular submission of samples to a *laboratory* that performs diagnostic testing and further characterisation of strains;

   c) serosurveillance conducted in susceptible species, including *wildlife*, to serve as sentinels for PPRV circulation in the country;

3) *vaccination*:

   a) *vaccination* is compulsory in the target population and is practised in accordance with Chapter 4.18.;

   b) detailed information on *vaccination* campaigns, in particular:

      i) the strategy that is adopted for the *vaccination* campaign;

      ii) target *populations* for *vaccination*;

      iii) target geographical area for *vaccination*;

      iv) monitoring of *vaccination* coverage, including serological monitoring of population immunity;

      v) the strategy to identify vaccinated animals;

      vi) technical specification of the vaccines used and description of the vaccine licensing procedures in place;

      vii) use of vaccines fully compliant with the standards and methods described in the *Terrestrial Manual*;

      viii) the proposed strategy and work plan including the timeline for transition to the cessation of *vaccination*;

4) the measures implemented to prevent the introduction of the pathogenic agent and to ensure the rapid detection of all PPR *outbreaks*;

5) an emergency preparedness plan and an emergency response plan to be implemented in case of PPR *outbreaks*;

6) work plan and timelines of the *official control programme*;

7) performance indicators for assessing the effectiveness of the control measures to be implemented;

8) monitoring, evaluation and review of the *official control programme* to demonstrate the effectiveness of the strategies.

The country will be included in the list of countries having an OIE endorsed *official control programme* for PPR in accordance with Chapter 1.6.

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.

NB: FIRST ADOPTED IN 1986; MOST RECENT UPDATE ADOPTED IN 2021.