

CHAPTER 14.9.

INFECTION WITH SHEEPPOX VIRUS (SHEEPPOX)
AND GOATPOX VIRUS (GOATPOX)

Article 14.9.1.

General provisions

For the purposes of the *Terrestrial Code*, sheeppox or goatpox is defined as an *infection* of domestic sheep or goats, hereafter 'animal hosts', with sheeppox virus (SPPV) or goatpox virus (GTPV), belonging to the genus *Capripoxvirus*.

The following defines the occurrence of *infection* with SPPV or GTPV:

- 1) SPPV or GTPV has been isolated and identified as such in a sample from an animal host; or
- 2) nucleic acid specific to SPPV or GTPV, excluding vaccine strains, has been detected in a sample from an animal host showing clinical signs or pathological lesions consistent with sheeppox or goatpox, or epidemiologically linked to a confirmed or suspected case, or giving cause for suspicion by previous association with or exposure to SPPV or GTPV; or
- 3) antigens specific to capripoxviruses, which are not the consequence of *vaccination*, ~~have~~have been detected in a sample from an animal host showing clinical signs or pathological lesions consistent with sheeppox or goatpox, or epidemiologically linked to a confirmed or suspected case, or giving cause for suspicion by previous association or exposure to SPPV or GTPV; or
- 4) antibodies specific to capripoxviruses, which are not the consequence of *vaccination*, have been detected in a sample from an animal host showing clinical signs or pathological lesions consistent with sheeppox or goatpox, or epidemiologically linked to a confirmed or suspected case, or giving cause for suspicion by previous association or exposure to SPPV or GTPV.

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

Standards for diagnosis and vaccines, as well as information on the epidemiology, are described in the *Terrestrial Manual*.

Article 14.9.2.

Safe commodities

When authorising the importation or transit of the following *commodities*, *Veterinary Authorities* should not require any sheeppox- ~~and~~ or goatpox-related conditions regardless of the *animal health status* of the country or zone of origin:

- 1) ultra high temperature (UHT) milk;
- 42) skeletal muscle *meat* of animals slaughtered in an approved *slaughterhouse/abattoir* and subjected to ante- and post-mortem inspections in accordance with Chapter 6.3., with favourable results;
- 23) heat-treated *meat products* in a hermetically sealed container with an F_0 value of 3 or above;

34) ~~processed~~ hooves and horns;

54) gelatine and collagen;

65) *protein meal*;

76) extruded dry pet food;

8) rendered fat.

Article 14.9.3.

Country or zone free from sheeppox and goatpox

A country or *zone* may be considered free from sheeppox and goatpox when:

1) the country or *zone* is historically free as described in point 2 b) of Article 1.4.6.;

OR

2) a) *infection* with SPPV and GTPV has been a *notifiable disease* in the entire country for at least the past two years;

2) b) for at least the past two years, appropriate *biosecurity* and *sanitary measures* to prevent the introduction of *infection* have been in place; in particular, the importations or movements of animal hosts and other *commodities* into the country or *zone* have been carried out in accordance with this chapter or other relevant chapters of the *Terrestrial Code*, including Chapter 2.1. 'Import risk analysis';

3) ~~*vaccination* is prohibited and no *vaccination* has taken place for at least the past eight months;~~

4) c) and either:

~~a) the country or *zone* is historically free as described in point 2 b) of Article 1.4.6.; or~~

~~i) *vaccination* has been prohibited, and~~ for at least two years ~~since the cessation of *vaccination*, a clinical *surveillance* programme in accordance with Article 14.9.22. has been in place in the entire country or *zone* and there has been no *case* in the country or *zone*; or~~

~~ii) *vaccination* has been prohibited, and~~ for at least twelve months ~~since the cessation of *vaccination*, a clinical, virological and serological *surveillance* programme in accordance with Article 14.9.22. has been in place in the entire country or *zone* and there has been no *case* in the country or *zone*.~~

In order to maintain its status, a country or *zone* free from sheeppox and goatpox should:

1) comply with points 1), 2) a) and 2) b) 3) above and *vaccination* continues to be prohibited;

United States	Comment category: Change Proposed amended text: <u>and <i>continue to prohibit vaccination continues to be prohibited</i></u> Rationale: Recommended edits for better clarity. Supporting evidence: n/a
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- 2) conduct *surveillance* in accordance with Articles 14.9.20. and 14.9.21.

Article 14.9.4.

Compartment free from sheeppox and goatpox

The establishment of a *compartment* free from sheeppox and goatpox should follow the relevant provisions laid down in this chapter and in Chapters 4.4. and 4.5.

Animal hosts in the *compartment* should be protected against all potential transmission routes including fomite and *vector*-borne transmission by the application of an effective *biosecurity* management system.

Article 14.9.5.

Country or zone infected with SPPV and GTPV

A country or *zone* should be considered as infected with SPPV and GTPV when the conditions for freedom from sheeppox and goatpox are not met.

Article 14.9.6.

Recovery of free status of the country or zone

Should a *case of infection* with SPPV or GTPV occur in a previously free country or *zone*, its status may be recovered eight months after the cleaning and *disinfection* of the last infected *establishment* or the last *vaccination*, whichever occurred last, provided that:;

- 1) a *stamping out policy* has been implemented;
- 2) clinical, virological and serological *surveillance* conducted in accordance with Article 14.9.22. has demonstrated the absence of *infection*.

Otherwise, Article 14.9.3. applies.

Article 14.9.7.

Recommendations for importation of domestic sheep and goats from countries, zones or compartments free from sheeppox and goatpox

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

- 1) showed no clinical signs of sheeppox and goatpox on the day of shipment;
- 2) were kept since birth or at least 21 days prior to shipment in the free country, *zone* or *compartment*.

Article 14.9.8.

Recommendations for importation of domestic sheep and goats from countries or zones infected with SPPV and GTPV

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

- 1) showed no clinical signs of sheeppox and goatpox on the day of shipment;
 - 2) were kept since birth or in a quarantine centre for the past 42 days prior to shipment in an establishment where no case of sheeppox and goatpox occurred during that period; and
 - 3) either ~~EITHER~~
 - a) have not been vaccinated against sheeppox and goatpox, were kept in a quarantine centre for the 42 days prior to shipment, and were subjected to a serological test at least 35 days after entering the *quarantine centre*, with negative results;
- OR
- b) were vaccinated using a live attenuated vaccine following the manufacturer's guidelines-instructions not less than 28 days prior to shipment.

Article 14.9.9.

Recommendations for importation of semen of domestic sheep and goats from countries, zones or compartments free from sheeppox and goatpox

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

- 1) the donor males:
 - a) showed no clinical sign of sheeppox and goatpox on the day of semen collection;
 - b) were kept in a free country, *zone* or *compartment* since birth or at least 21 days prior to semen collection; and
- 2) the semen was collected, processed and stored in accordance with Chapters 4.6. and 4.7.

Article 14.9.10.

Recommendations for importation of semen of domestic sheep and goats from countries or zones infected with SPPV and GTPV

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

- 1) the donor males:
 - a) have been kept for at least 42 days prior to semen collection in a *semen collection centre* where no *case of infection* with SPPV and GTPV was reported during that period;
 - b) showed no clinical sign of sheeppox and goatpox during that period and for the following 21 days; and
- EITHER
- c) were vaccinated using a live attenuated vaccine following the manufacturer's guidelines-instructions; not less than 28 days prior to the first semen collection; ~~and~~
- OR
- d) have not been vaccinated against sheeppox and goatpox; and

- i) were subjected to a serological test to detect antibodies specific to capripoxviruses, with negative results, at least every 28 days throughout the collection period and one test 28 days after the final collection for this consignment; OR

United States	Comment category: Change Proposed amended text: i) ...and one test <u>between 28 days and 60 days</u> after the final collection for this consignment... Rationale: In Article 14.9.10, point 1.d.i, recommend the serological testing following final collection of semen be “between 28 days and 60 days” for animals from countries affected by sheeppox or goatpox. According to the Terrestrial Manual Chapter 3.8.11, Sheeppox and Goatpox, the highest antibody levels are detected within 1-2 months after infection. In order to provide the best chance of detecting infection, testing should occur within 1-2 months following final collection. This proposed change is similar to the recommendation for embryo collection in Article 14.9.12, and aligns with testing protocols for semen collection in other disease-specific chapters of the Terrestrial Code, such as Bluetongue virus and Epizootic hemorrhagic disease. Supporting evidence: https://www.woah.org/fileadmin/Home/eng/Health_standards/tahm/3.08.11_SHEEP_POX_GOAT_POX.pdf
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- ii) were subjected to an agent detection test at commencement and conclusion of, and at least every 28 days during semen collection for this consignment, with negative results;
- 2) the semen was collected, processed and stored in a *semen collection centre* in accordance with Chapters 4.6. and 4.7.

Article 14.9.11.

Recommendations for importation of oocytes or embryos of domestic sheep and goats from countries, zones or compartments free from sheeppox and goatpox

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

- 1) the donor animals:
 - a) showed no clinical sign of sheeppox and goatpox on the day of collection;
 - b) were kept in a free country, *zone* or *compartment* since birth or at least 21 days prior to collection; and
- 2) the semen used to fertilise the oocytes complied with the conditions referred to in Article 14.9.9. or Article 14.9.10., as relevant;
- 3) the oocytes or embryos were collected, processed and stored in accordance with Chapters 4.8. and 4.10., as relevant.

Article 14.9.12.

Recommendations for importation of oocytes or embryos of domestic sheep and goats from countries or zones infected with SPPV and GTPV

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

- 1) the donor animals:
 - a) have been kept for at least 42 days prior to collection, in an *establishment* where no *case* of *infection* with SPPV and GTPV was reported during that period;
 - b) showed no clinical sign of sheeppox and goatpox during that period and for the following 21 days; and
- EITHER
- c) were vaccinated using a live attenuated vaccine following the manufacturer's guidelines instructions; not less than 28 days prior to the first collection;
- OR
- d) have not been vaccinated against SPPV and GTPV and were subjected to a serological test to detect antibodies specific to capripoxviruses, with negative results, on the day of collection and at least 28 days after collection;

United States	Comment category: Change Proposed amended text: i) ... <u>on the day of collection</u> and <u>at least 28 days between 28 days and 60 days</u> after collection... Rationale: In Article 14.9.12, point 1.d.i, recommend one serological test following collection of oocytes and embryos be "between 28 days and 60 days" for animals from countries affected by sheeppox or goatpox. According to the Terrestrial Manual Chapter 3.8.11, Sheeppox and Goatpox, the highest antibody levels are detected within 1-2 months after infection. In
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	order to provide the best chance of detecting infection testing should occur within 1-2 months after collection. This proposed change is similar to the recommendation for semen collection in Article 14.9.10, and aligns with testing protocols for oocyte and embryo collection in other disease-specific chapters of the Terrestrial Code, such as Bluetongue virus and Epizootic hemorrhagic disease. Supporting evidence: https://www.woah.org/fileadmin/Home/eng/Health_standards/tahm/3.08.11_SHEEP_POX_GO_AT_POX.pdf
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- 2) the semen used to fertilise the oocytes complied with the conditions referred to in Article 14.9.9. or Article 14.9.10., as relevant;
- 3) the oocytes or embryos were collected, processed and stored in accordance with Chapters 4.8. and 4.10., as relevant.

Article 14.9.13.

Recommendations for importation of fresh meat and meat products except products listed in Article 14.9.2. from countries, zones or compartments free from sheeppox and goatpox

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

- 1) were kept since birth or at least 21 days prior to shipment in the free country, *zone* or *compartment*;
- 2) have been slaughtered in an approved *slaughterhouse/abattoir* and have been subjected to ante- and post-mortem inspections in accordance with Chapter 6.3., with favourable results.

Article 14.9.14.

Recommendations for importation of meat products except products listed in Article 14.9.2. from countries or zones infected with SPPV and GTPV

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

- 1) the entire consignment of *meat products* comes from animals which:
 - a) showed no clinical sign of sheeppox and goatpox within 24 hours before *slaughter*;
 - b) have been slaughtered in an approved *slaughterhouse/abattoir* and have been subjected to ante- and post-mortem inspections in accordance with Chapter 6.3., with favourable results;
- 2) the *meat products* were processed using heat treatment to a minimum internal temperature of 65°C for at least 30 minutes;
- 3) the necessary precautions were taken after processing to avoid contact of the *commodities* with any potential source of SPPV and GTPV.

Article 14.9.15.

Recommendations for importation of milk and milk products from domestic sheep and goats except products listed in Article 14.9.2. from countries, zones or compartments free from sheeppox and goatpox

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

Article 14.9.16.

Recommendations for importation of milk and milk products from domestic sheep and goats except products listed in Article 14.9.2. from countries or zones infected with SPPV and GTPV

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

- 1) originated from animals kept in *establishments* that at the time of milk collection were not infected or suspected to be infected with ~~were not subjected to restrictions due to sheeppox SPPV and goatpox GTPV;~~
- 2) were subjected to one of the following treatments:
 - a) pasteurisation;

- b) ~~pH maintained at less than 6 for more than one hour;~~
- e) any combination of ~~control~~ risk mitigation measures with an equivalent performance.

Article 14.9.17.

Recommendations for importation of ~~skins, wool and hair from~~ domestic sheep and goats from countries, zones or compartments free from sheeppox and goatpox

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that these products originated from animals that:

- 1) showed no clinical signs of sheeppox and goatpox;
- 2) were kept since birth or at least 21 days prior in a free country, *zone* or *compartment*.

Article 14.9.18.

Recommendations for importation of wool and hair from domestic sheep and goats from countries or zones infected with SPPV and GTPV

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

- 1) these products:
 - a) were derived from animals complying with Article 14.9.8.; or
 - b) have been washed by immersion in a water-soluble detergent with sodium hydroxide or potassium hydroxide held at 60 to 70°C for a minimum of 10 minutes;
- 2) the necessary precautions were taken after processing to avoid contact of the *commodities* with any potential source of SPPV and GTPV.

Article 14.9.19.

Recommendations for importation of skins from domestic sheep and goats

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

- 1) these products were derived from *animals* that had been kept in a country or *zone* free from sheeppox and goatpox since birth or for at least the past 42 days;

OR

- 2) these products were:
 - a) derived from *animals* which had undergone ante- and post-mortem inspections in accordance with Chapter 6.3. with favourable results; and
 - b) dry-salted or wet-salted for a period of at least 14 days prior to dispatch; or
 - c) treated for a period of at least seven days in salt (NaCl) with the addition of 2% sodium carbonate (Na₂CO₃); or
 - d) dried for a period of at least 42 days at a temperature of at least 20°C; and

- 3) the necessary precautions were taken after processing to avoid contact of the *commodities* with any potential source of SPPV and GTPV.

Article 14.9.20.

Principles of surveillance for sheeppox and goatpox

Articles 14.9.20. to 14.9.22. define the principles and provide guidance on *surveillance* for sheeppox and goatpox, complementary to Chapter 1.4. and Chapter 1.5.

The purposes of *surveillance* may be the early detection of *cases*, the measurement and gathering of data for the design of control programmes, monitoring of prevention and control programmes, or for the demonstration of freedom of *infection* in a country, *zone* or *compartment*.

Important components of the epidemiology of sheeppox and goatpox that should be considered when planning *surveillance* programmes are:

- Multiple routes of transmission including direct contact, aerosols, *vector-borne*, ~~and~~ via fomites and from the environment;
- Skin lesions and scabs contain high viral loads which are important sources for transmission;
- The absence of carrier states, subclinical *infection*, or latent *infection*;
- A long *incubation period* of up to 21 days;
- Ability of the virus to potentially survive for months in the environment under appropriate conditions.

Article 14.9.21.

Surveillance for early warning of sheeppox and goatpox

An ongoing *surveillance* programme for sheeppox and goatpox should be in place and be designed to detect the presence of *infection* with SPPV or *infection* with GTPV in the country, *zone* or *compartment* in a timely manner.

The sheeppox and goatpox *surveillance* programme should include the following:

- 1) An *early warning system* for reporting suspected ~~animals~~ cases, in accordance with Article 1.4.5.;
- 2) Implementation, as relevant, of regular and frequent clinical inspection of animals at risk of sheeppox and goatpox that may, for instance, include animals that were imported from infected countries, animals in high-risk areas adjacent to infected countries or *zones*, or animals in or around *establishments* such as *slaughterhouses/abattoirs* or live animal markets;
- 3) Samples from suspected *cases* should be sent to a *laboratory* for confirmatory testing.

~~Veterinary Authority should develop early warning systems to detect sheeppox or goatpox, and promote awareness campaigns to inform~~ sensitise ~~veterinarians~~, owners, keepers, and other stakeholders of the domestic sheep and goat industry.

Article 14.9.22.

Surveillance for demonstrating freedom from sheeppox and goatpox

In addition to the provisions in Article 1.4.6., the following strategies may be used by Member Countries seeking to demonstrate freedom in accordance with Articles 14.9.3. and 14.9.6.

1. Clinical surveillance

Clinical *surveillance* is essential for detecting any *case* of *infection* with SPPV or GTPV and requires the physical examination of animal hosts. This should be based on a *surveillance* programme that is designed to provide a high level of confidence of detection of disease and requires a sufficient number of clinically susceptible animals to be examined regularly at an appropriate frequency and investigations recorded and quantified.

2. Serological and virological surveillance

As an addition to clinical *surveillance*, serological and virological testing of domestic sheep and goats may be used to detect the presence of *infection* with SPPV and GTPV. The study population should be representative of the target population (population at risk) in the country or *zone*.

Serological and virological *surveillance* programmes should take into account *vaccination* programmes in the region and *vaccine* strains being used. It is not possible to differentiate vaccinated and unvaccinated animals via serological methods and therefore any serological *surveillance* should be restricted to unvaccinated animals.

In some circumstances it is possible to differentiate between wild-type and vaccine strains using nucleic acid identification methods.

Article 14.9.23.

Prevention and control programmes for sheeppox and goatpox

This article describes important components of prevention and control programmes, complementary to Chapter 4.19. Important components of a prevention and control programme for sheeppox and goatpox include a combination of *biosecurity*, *stamping-out policy*, *animal traceability*, movement controls, *vaccination*, *surveillance* and *risk communication*. These programmes should be used when Member Countries wish to attain a free status from sheeppox and goatpox.

Prevention of sheeppox and goatpox relies on *biosecurity*, awareness programmes and movement controls undertaken in accordance with the *sanitary measures* recommended in this chapter. Member Countries may also apply a *vaccination* programme in accordance with Chapter 4.18. in areas of high risk. *Protection zones* in accordance with Article 4.4.6. may be established.

- *Laboratory* capacity: Member Countries are advised to have systems in place for the collection and submission of samples to a *laboratory* that performs diagnostic testing to confirm suspected *cases*.
- *Biosecurity*: SPPV and GTPV are stable for long periods of time in the environment and on fomites and therefore *biosecurity*, as well as cleaning and *disinfection* and safe disposal of dead animals, by-products and waste are important. *Biosecurity* should apply to all actors in the production chain including service providers ~~like~~ such as *veterinarians* and shearers.
- *Stamping-out policy*: a *stamping-out policy* including the *killing* of all susceptible animals in the *flock* or *epidemiological unit* is useful for the rapid control of sheeppox and goatpox. Member Countries may choose to implement a *stamping-out policy* that only involves the removal of selected animals such as clinical or in-contact animals which could assist in progressively reducing the prevalence of disease. Zoning and movement controls are important in instances where a *stamping-out policy* is applied. Compensation should be considered to facilitate compliance.
- Movement controls: movement controls of animals and *animal products* are important to stop direct and indirect transmission, in particular animals, as they present the highest risk of virus transmission. *Animal identification* in accordance with Chapter 4.2. and *animal traceability* should be in place to support the application of movement controls. Movement controls may also be applied as part of zoning in accordance with Chapter 4.4. Attention should be given to management of common grazing and transhumance practices which represent an important route of virus transmission.

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- *Vaccination*: *vaccination* may be used to control sheeppox and goatpox in endemic areas, or in a high-risk free country or zone to prevent the introduction or spread of SPPV and GTPV or as an emergency measure in response to *outbreaks*. Any vaccine used should comply with a *vaccination* strategy as described in Chapter 4.18. Member Countries may consider having in their legal framework the provisions for emergency *vaccination* using live attenuated vaccines. Post-vaccination monitoring should be used to measure the effectiveness of *vaccination* programmes and may be done using approaches ~~like~~ such as serological methods, epidemiological methods and *vaccination* records.
 - *Vector* control: although transmission of SPPV and GTPV by *vectors* is possible, it is not the main transmission route and therefore other measures should be ~~prioritised over~~implemented prior to *vector* control measures. *Vector* control may include *vector* protection or applying insect repellents or insecticides to *establishments*.

As with all prevention and control programmes, collaboration with stakeholders is essential and *risk communication* should be designed in accordance with Chapter 2.1.
