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**TERRESTRIAL ANIMAL
HEALTH CODE**

VOLUME II

Recommendations applicable to OIE Listed diseases and other
diseases of importance to international trade

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FOREWORD

The OIE Terrestrial Animal Health Code (Terrestrial Code) sets out standards for the improvement of terrestrial animal health and welfare and veterinary public health worldwide, including through standards for safe international trade in terrestrial animals (mammals, birds and bees) and their products. The health measures in the Terrestrial Code should be used by the veterinary authorities of importing and exporting countries to provide for early detection, reporting and control agents pathogenic to terrestrial animals and, in the case of zoonoses, for humans, and to prevent their transfer via international trade in terrestrial animals and terrestrial animal products, while avoiding unjustified sanitary barriers to trade.

The health measures in the Terrestrial Code have been formally adopted by the World Assembly of OIE Delegates, which constitutes the organisation's highest decision-making body. The 21st edition incorporates modifications to the Terrestrial Code agreed at the 80th OIE General Session in May 2012. The 2012 edition includes revised information on the following subjects: glossary; notification of diseases and epidemiological information; criteria for the inclusion of diseases, infections and infestations on the OIE List; animal health surveillance; procedures for self declaration and for official recognition by the OIE; import risk analysis; evaluation of Veterinary Services; communication; application of compartmentalisation; collection and processing of bovine, small ruminant and porcine semen; collection and processing of in vivo derived embryos from livestock and horses; official health control of bee diseases; OIE procedures relevant to the Agreement on the Application of Sanitary and Phytosanitary Measures of the World Trade Organization; model veterinary certificate for international movements of dogs, cats and ferrets originating from countries considered infected with rabies; biosecurity procedures in poultry production; harmonization of national antimicrobial resistance surveillance and monitoring programmes; monitoring of the quantities and usage patterns of antimicrobial agents used in food producing animals; zoonoses transmissible from non-human primates; introduction to the recommendations for animal welfare; use of animals in research and education; Aujeszky's disease; rabies; African horse sickness; equine influenza; equine viral arteritis; avian influenza; and rabbit haemorrhagic disease.

This edition includes two new chapters on veterinary legislation and animal welfare and beef cattle production systems and incorporates a new model veterinary certificate for international trade in laboratory animals.

The development of these standards and recommendations is the result of the ongoing work by the OIE Terrestrial Animal Health Standards Commission (the Code Commission). This Commission, which comprises six elected members, meets twice yearly to address its work programme. The Commission draws upon the expertise of internationally renowned scientific experts to prepare draft texts for new texts in the Terrestrial Code and to revise existing texts in the light of advances in veterinary science. The views of OIE National Delegates are systematically sought through the twice yearly circulation of draft texts. The Code Commission collaborates closely with other Specialist Commissions of the OIE, including the Aquatic Animal Health Standards Commission, the Biological Standards Commission and the Scientific Commission for Animal Diseases, to ensure the recommendations contained in the Terrestrial Code are based upon the latest scientific information.

The measures recommended in the Terrestrial Code are formally adopted by the World Assembly comprising the plenary meeting of OIE National Delegates, who are in most cases the heads of OIE Members' veterinary authorities. The World Trade Organization (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement) formally recognises the role of the OIE to specify standards and recommendations as the international references for animal health and zoonotic diseases. The SPS Agreement provides a multilateral framework, incorporating WTO Members' rights and disciplines, to guide the development, adoption and enforcement of sanitary measures to facilitate safe international trade. According to the SPS Agreement, WTO Members should provide a scientific justification for their import health measures. It is preferable that these be based on OIE recommendations. Where there are no OIE recommendations or in cases where a government chooses to apply more restrictive conditions than those recommended by the OIE, the importing country should base its animal health measures on an import risk analysis as described in the Terrestrial Code. The Terrestrial Code is thus a key part of the WTO legal framework for international trade.

The Terrestrial Code is published annually in the three official OIE languages (English, French and Spanish). An unofficial translation into Russian is also available from the OIE upon request. The Terrestrial Code may be viewed and downloaded from the OIE Web site at <http://www.oie.int>.

The User's Guide, which follows this foreword, is designed to help Veterinary Authorities and other interested parties to use the Terrestrial Code and to promote fair access for all Members, including developing and least developed countries to international markets for animals and animal products.

We wish to thank the members of the Code Commission, Delegates and the experts participating in Working Groups and ad hoc Groups and other Commissions for their expert advice. Finally but not least, my thanks go to the staff of the OIE for their dedication in producing this 21st edition of the Terrestrial Code.

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July 2012

USER'S GUIDE

A. General remarks

- 1) *The purpose of this guide is to assist the Veterinary Authorities of OIE Members to use the OIE Terrestrial Animal Health Code (hereafter referred to as the Terrestrial Code) in the application of animal health measures to international trade in animals and animal products.*
- 2) *The recommendations in each of the disease chapters in Volume II of the Terrestrial Code are designed to prevent the disease in question being introduced into the importing country, taking into account the nature of the commodity and the animal health status of the exporting country. Correctly applied, OIE recommendations provide for trade in animals and animal products to take place with an optimal level of animal health security, based on the most up to date scientific information and available techniques.*
- 3) *The recommendations in the Terrestrial Code make reference only to the animal health situation in the exporting country, and assume that either the disease is either not present in the importing country or is the subject of a control or eradication programme. An OIE Member may authorise the importation of animals or animal products into its territory under conditions more or less stringent than those recommended by the Terrestrial Code. Where the conditions are more restrictive, they should be based on a scientific risk analysis conducted in accordance with OIE recommendations. For Members of the World Trade Organization (WTO), international trade measures should be based on a relevant international standard (i.e. for animal health measures, an OIE standard) or an import risk analysis, to meet their obligations under the WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement).*
- 4) *Key terms and expressions used in the Terrestrial Code are defined in the Glossary. When preparing international veterinary health certificates, the importing country should endeavour to use these terms and expressions in accordance with the definitions given in the Terrestrial Code. The Terrestrial Code contains model veterinary health certificates as a further support to Members.*
- 5) *The OIE aims to include, at the beginning of each chapter relating to a specific disease, an article listing either the commodities that are considered safe for trade regardless of the status of the country (or zone) for the disease in question. This is a work in progress and some chapters do not yet contain articles listing safe commodities. In some chapters, the OIE identifies the commodities that are capable of transmitting the disease through international trade and/or those considered not to present a risk.*
- 6) *In many of the Terrestrial Code chapters, the use of specified diagnostic tests and vaccines is recommended and a reference made to the relevant section in the OIE Manual of Diagnostic Tests and Vaccines for Terrestrial Animals (hereafter referred to as the Terrestrial Manual). A table summarising the recommended diagnostic tests for OIE listed diseases may be found in Chapter 1.3. of the Terrestrial Code.*
- 7) *Section 5 of the Terrestrial Code deals with obligations and ethics in international trade. The OIE recommends that Veterinary Authorities have sufficient copies of the Terrestrial Code to allow all veterinarians directly involved in international trade to familiarise themselves with OIE recommendations. In addition, facilities responsible for disease diagnosis and vaccine production should be fully conversant with the recommendations in the Terrestrial Manual.*
- 8) *The term ('under study') is found in some chapters, with reference to an article or part of an article. This means that the text has not yet been adopted by the World Assembly of OIE Delegates and the particular provisions are not part of the Terrestrial Code. Members may wish to follow such recommendations in part or in full.*
- 9) *The complete text of the Terrestrial Code is available on the OIE Web site and may be downloaded from: <http://www.oie.int>.*

B. Disease Information, the Bulletin and World Animal Health

These three OIE publications inform Veterinary Authorities on the animal health situation worldwide. Importing countries can thus have an overview of the animal health status, disease occurrence and control programmes in exporting countries.

C. International veterinary health certificates

- 1) *An international veterinary certificate is an official document drawn up by the exporting country in accordance with the terms of Chapter 5.1. and Chapter 5.2. of the Terrestrial Code, describing the animal health requirements and, where appropriate, public health requirements for the exported commodity. The quality of the exporting country's Veterinary Services, including the ethical approach to the provision of veterinary health certificates, is key in providing assurance to trading partners regarding the safety of exported animals and products.*
- 2) *International veterinary health certificates underpin international trade and provide assurances to the importing country regarding the health status of the animals and products imported. The health measures prescribed should take into account the health status of both exporting and importing countries and be based upon the recommendations in the Terrestrial Code.*
- 3) *The following steps should be taken when drafting international veterinary health certificates:*
 - a) *list the diseases for which the importing country is justified in seeking protection, having regard to the disease status of the importing country and the exporting country. Importing countries should not impose measures in regard to diseases that occur in the importing country and that are not subject to official control or eradication programmes;*
 - b) *list the health requirements for each of these diseases. These can be determined by referring to the relevant articles in the Terrestrial Code. The Terrestrial Code provides for various levels of sanitary status: e.g. disease free country, zone or compartment, disease free herd, vaccinated or non-vaccinated population;*
 - c) *OIE models (see Chapters 5.10 to 5.12. of the Terrestrial Code) should be used as the baseline for international veterinary health certificates. The content and form of the final certificate may be modified as required.*
- 4) *As stated in Article 5.2.2. of the Terrestrial Code, international veterinary health certificates should be kept as simple as possible and should be clearly worded, to avoid misunderstanding of the importing country's requirements.*

D. Guidance notes for importers and exporters

To provide a clear understanding of trade requirements, it is advisable to prepare 'guidance notes' to assist importers and exporters. These notes should identify and explain the trade conditions, including the measures to be applied before and after export, during transport and unloading, relevant legal obligations and operational procedures. Exporters should also be reminded of the International Air Transport Association (IATA) rules governing air transport of animals and animal products.

The guidance notes should advise on all details to be included in the health certification accompanying the consignment to its destination.

GLOSSARY

For the purposes of the *Terrestrial Code*:

Acceptable risk

means a *risk* level judged by each OIE Member to be compatible with the protection of animal and public health within its territory.

Animal

means a mammal, bird or bee.

Animal for breeding or rearing

means a domesticated or confined *animal* which is not intended for *slaughter* within a short time.

Animal for slaughter

means an *animal* intended for *slaughter* within a short time, under the control of the relevant *Veterinary Authority*.

Animal handler

means a person with a knowledge of the behaviour and needs of *animals* who, with appropriate experience and a professional and positive response to an *animal's* needs, can achieve effective management and good *welfare*. Competence should be gained through formal training and/or practical experience.

Animal health status

means the status of a country or a *zone* with respect to an *animal disease*, according to the criteria listed in the relevant chapter of the *Terrestrial Code* dealing with the *disease*.

Animal identification

means the combination of the identification and *registration* of an *animal* individually, with a unique identifier, or collectively by its *epidemiological unit* or group, with a unique group identifier.

Animal identification system

means the inclusion and linking of components such as identification of *establishments/owners*, the person(s) responsible for the *animal(s)*, movements and other records with *animal identification*.

Animal traceability

means the ability to follow an *animal* or group of *animals* during all stages of its life.

Animal welfare

means how an *animal* is coping with the conditions in which it lives. An *animal* is in a good state of *welfare* if (as indicated by scientific evidence) it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and if it is not suffering from unpleasant states such as pain, fear and distress. Good *animal welfare* requires *disease* prevention and veterinary treatment, appropriate shelter, management, nutrition, humane handling and human *slaughter/killing*. *Animal welfare* refers to the state of the *animal*; the treatment that an *animal* receives is covered by other terms such as animal care, animal husbandry, and humane treatment.

Antimicrobial agent

means a naturally occurring, semi-synthetic or synthetic substance that exhibits antimicrobial activity (kill or inhibit the growth of micro-organisms) at concentrations attainable *in vivo*. Anthelmintics and substances classed as disinfectants or antiseptics are excluded from this definition.

Apiary

means a *beehive* or group of *beehives* whose management allows them to be considered as a single *epidemiological unit*.

Appropriate level of protection

means the level of protection deemed appropriate by the country establishing a *sanitary measure* to protect human or animal life or health within its territory.

Approved

means officially approved, accredited or registered by the *Veterinary Authority*.

Artificial insemination centre

means a facility approved by the *Veterinary Authority* and which meets the conditions set out in the *Terrestrial Code* for the collection, processing and/or storage of semen.

Beehive

means a structure for the keeping of honey bee colonies that is being used for that purpose, including frameless hives, fixed frame hives and all designs of moveable frame hives (including nucleus hives), but not including packages or cages used to confine bees for the purpose of transport or isolation.

Biosecurity plan

means a plan that identifies potential pathways for the introduction and spread of *disease* in a *zone* or *compartment*, and describes the measures which are being or will be applied to mitigate the *disease risks*, if applicable, in accordance with the recommendations in the *Terrestrial Code*.

Border post

means any airport, or any port, railway station or road check-point open to *international trade of commodities*, where import veterinary inspections can be performed.

Captive wild animal

means an *animal* that has a phenotype not significantly affected by human selection but that is captive or otherwise lives under direct human supervision or control, including zoo *animals* and pets.

Case

means an individual *animal* infected by a pathogenic agent, with or without clinical signs.

Collection centre

means a facility approved by the *Veterinary Authority* for the collection of embryos/ova and used exclusively for donor *animals* which meet the conditions of the *Terrestrial Code*.

Commodity

means live *animals*, products of animal origin, animal genetic material, biological products and *pathological material*.

Compartment

means an animal *subpopulation* contained in one or more *establishments* under a common biosecurity management system with a distinct health status with respect to a specific *disease* or specific *diseases* for which required *surveillance*, control and biosecurity measures have been applied for the purpose of *international trade*.

Competent Authority

means the *Veterinary Authority* or other Governmental Authority of a Member having the responsibility and competence for ensuring or supervising the implementation of animal health and *welfare* measures, international veterinary certification and other standards and recommendations in the *Terrestrial Code* and in the *OIE Aquatic Animal Health Code* in the whole territory.

Container

means a non-self-propelled receptacle or other rigid structure for holding *animals* during a *journey* by one or several means of transport.

Containment zone

means a defined *zone* around and including suspected or infected *establishments*, taking into account the epidemiological factors and results of investigations, where control measures to prevent the spread of the *infection* are applied.

Day-old birds

means birds aged not more than 72 hours after hatching.

Death

means the irreversible loss of brain activity demonstrable by the loss of brain stem reflexes.

Disease

means the clinical and/or pathological manifestation of *infection*.

Disinfection

means the application, after thorough cleansing, of procedures intended to destroy the infectious or parasitic agents of animal *diseases*, including *zoonoses*; this applies to premises, *vehicles* and different objects which may have been directly or indirectly contaminated.

Disinfestation

means the application of procedures intended to eliminate *infestation*.

Early detection system

means a system for the timely detection and identification of an incursion or emergence of *diseases/infections* in a country, *zone* or *compartment*. An early detection system should be under the control of the *Veterinary Services* and should include the following characteristics:

- a) representative coverage of target animal *populations* by field services;
- b) ability to undertake effective *disease* investigation and reporting;
- c) access to laboratories capable of diagnosing and differentiating relevant *diseases*;
- d) a training programme for *veterinarians*, *veterinary para-professionals*, livestock owners/keepers and others involved in handling *animals* for detecting and reporting unusual animal health incidents;
- e) the legal obligation of private *veterinarians* to report to the *Veterinary Authority*;
- f) a national chain command.

Emerging disease

means a new *infection* resulting from the evolution or change of an existing pathogenic agent, a known *infection* spreading to a new geographic area or *population*, or a previously unrecognized pathogenic agent or *disease* diagnosed for the first time and which has a significant impact on animal or public health.

Epidemiological unit

means a group of *animals* with a defined epidemiological relationship that share approximately the same likelihood of exposure to a pathogen. This may be because they share a common environment (e.g. *animals* in a pen), or because of common management practices. Usually, this is a *herd* or a *flock*. However, an *epidemiological unit* may also refer to groups such as *animals* belonging to residents of a village, or *animals* sharing a communal animal handling facility. The epidemiological relationship may differ from *disease* to *disease*, or even strain to strain of the pathogen.

Equivalence of sanitary measures

means the state wherein the *sanitary measure(s)* proposed by the *exporting country* as an alternative to those of the *importing country*, achieve(s) the same level of protection.

Eradication

means the elimination of a pathogenic agent from a country or *zone*.

Establishment

means the premises in which *animals* are kept.

Euthanasia

means the act of inducing *death* using a method that causes a rapid and irreversible loss of consciousness with minimum pain and distress to *animal*.

Exporting country

means a country from which *commodities* are sent to another country.

Feral animal

means an *animal* of a domesticated species that now lives without direct human supervision or control.

Flock

means a number of *animals* of one kind kept together under human control or a congregation of gregarious *wild animals*. For the purposes of the *Terrestrial Code*, a *flock* is usually regarded as an *epidemiological unit*.

Free compartment

means a *compartment* in which the absence of the animal pathogen causing the *disease* under consideration has been demonstrated by all requirements specified in the *Terrestrial Code* for free status being met.

Free zone

means a *zone* in which the absence of the *disease* under consideration has been demonstrated by the requirements specified in the *Terrestrial Code* for free status being met. Within the *zone* and at its borders, appropriate *official veterinary control* is effectively applied for *animals* and animal products, and their transportation.

Fresh meat

means *meat* that has not been subjected to any treatment irreversibly modifying its organoleptic and physicochemical characteristics. This includes frozen *meat*, chilled *meat*, minced *meat* and mechanically recovered *meat*.

Greaves

means the protein-containing residue obtained after the partial separation of fat and water during the process of rendering.

Hatching eggs

means fertilised bird eggs, suitable for incubation and hatching.

Hazard

means a biological, chemical or physical agent in, or a condition of, an *animal* or animal product with the potential to cause an adverse health effect.

Hazard identification

means the process of identifying the pathogenic agents which could potentially be introduced in the *commodity* considered for importation.

Headquarters

means the Permanent Secretariat of the World Organisation for Animal Health located at:

12, rue de Prony, 75017 Paris, FRANCE

Telephone: 33-(0)1 44 15 18 88

Fax: 33-(0)1 42 67 09 87

Electronic mail: oiie@oiie.int

WWW: <http://www.oiie.int>

Herd

means a number of *animals* of one kind kept together under human control or a congregation of gregarious *wild animals*. For the purposes of the *Terrestrial Code*, a *herd* is usually regarded as an *epidemiological unit*.

Importing country

means a country that is the final destination to which *commodities* are sent.

Incidence

means the number of new *cases* or *outbreaks* of a *disease* that occur in a population at risk in a particular geographical area within a defined time interval.

Incubation period

means the longest period which elapses between the introduction of the pathogen into the *animal* and the occurrence of the first clinical signs of the *disease*.

Infected zone

means a *zone* in which a *disease* has been diagnosed.

Infection

means the entry and development or multiplication of an infectious agent in the body of humans or *animals*.

Infective period

means the longest period during which an affected *animal* can be a source of *infection*.

Infestation

means the external invasion or colonisation of *animals* or their immediate surroundings by arthropods, which may cause *disease* or are potential *vectors* of infectious agents.

International trade

means importation, exportation and transit of *commodities*.

International veterinary certificate

means a certificate, issued in conformity with the provisions of Chapter 5.2., describing the animal health and/or public health requirements which are fulfilled by the exported *commodities*.

Journey

An *animal* transport journey commences when the first *animal* is loaded onto a *vehicle/vessel* or into a *container* and ends when the last *animal* is unloaded, and includes any stationary resting/holding periods. The same *animals* do not commence a new journey until after a suitable period for rest and recuperation, with adequate feed and water.

Killing

means any procedure which causes the *death* of an *animal*.

Laboratory

means a properly equipped institution staffed by technically competent personnel under the control of a specialist in veterinary diagnostic methods, who is responsible for the validity of the results. The *Veterinary Authority* approves and monitors such laboratories with regard to the diagnostic tests required for *international trade*.

Lairage

means pens, yards and other holding areas used for accommodating *animals* in order to give them necessary attention (such as water, feed, rest) before they are moved on or used for specific purposes including *slaughter*.

Listed diseases

means the list of transmissible *disease* agreed by the World Assembly of OIE Delegates and set out in Chapter 1.2. of the *Terrestrial Code*.

Loading/unloading

Loading means the procedure of moving *animals* onto a *vehicle/vessel* or into a *container* for transport purposes, while unloading means the procedure of moving *animals* off a *vehicle/vessel* or out of a *container*.

Market

means a place where *animals* are assembled for the purpose of trade or sale.

Meat

means all edible parts of an *animal*.

Meat-and-bone meal

means the solid protein products obtained when animal tissues are rendered, and includes any intermediate protein product other than peptides of a molecular weight less than 10,000 daltons and amino-acids.

Meat products

means *meat* that has been subjected to a treatment irreversibly modifying its organoleptic and physicochemical characteristics.

Milk

means the normal mammary secretion of milking *animals* obtained from one or more milkings without either addition to it or extraction from it.

Milk product

means the product obtained by any processing of *milk*.

Modified stamping-out policy

see *stamping-out policy*.

Monitoring

means the intermittent performance and analysis of routine measurements and observations, aimed at detecting changes in the environment or health status of a *population*.

Notifiable disease

means a *disease* listed by the *Veterinary Authority*, and that, as soon as detected or suspected, should be brought to the attention of this *Authority*, in accordance with national regulations.

Notification

means the procedure by which:

- a) the *Veterinary Authority* informs the *Headquarters*,
- b) the *Headquarters* inform the *Veterinary Authority*,

of the occurrence of an *outbreak* of *disease* or *infection*, according to the provisions of Chapter 1.1. of the *Terrestrial Code*.

Official control programme

means a programme which is approved, and managed or supervised by the *Veterinary Authority* of a country for the purpose of controlling a *vector*, pathogen or *disease* by specific measures applied throughout that country, or within a *zone* or *compartment* of that country.

Official Veterinarian

means a *veterinarian* authorised by the *Veterinary Authority* of the country to perform certain designated official tasks associated with animal health and/or public health and inspections of *commodities* and, when appropriate, to certify in conformity with the provisions of Chapters 5.1. and 5.2. of the *Terrestrial Code*.

Official veterinary control

means the operations whereby the *Veterinary Services*, knowing the location of the *animals* and after taking appropriate actions to identify their owner or responsible keeper, are able to apply appropriate animal health measures, as required. This does not exclude other responsibilities of the *Veterinary Services* e.g. food safety.

Outbreak

means the occurrence of one or more *cases* in an *epidemiological unit*.

Pathological material

means samples obtained from live or dead *animals*, containing or suspected of containing infectious or parasitic agents, to be sent to a *laboratory*.

Place of shipment

means the place where the *commodities* are loaded into the *vehicle* or handed to the agency that will transport them to another country.

Population

means a group of *units* sharing a common defined characteristic.

Post-journey period

means the period between *unloading* and either recovery from the effects of the *journey* or *slaughter* (if this occurs before recovery).

Poultry

means all domesticated birds, including backyard poultry, used for the production of *meat* or eggs for consumption, for the production of other commercial products, for restocking supplies of game, or for breeding these categories of birds, as well as fighting cocks used for any purpose.

Birds that are kept in captivity for any reason other than those reasons referred to in the preceding paragraph, including those that are kept for shows, races, exhibitions, competitions or for breeding or selling these categories of birds as well as pet birds, are not considered to be poultry.

Pre-journey period

means the period during which *animals* are identified, and often assembled for the purpose of *loading* them.

Prevalence

means the total number of *cases* or *outbreak* of a *disease* that are present in a population at risk, in a particular geographical area, at one specified time or during a given period.

Protection zone

means a *zone* established to protect the health status of *animals* in a free country or *free zone*, from those in a country or *zone* of a different *animal health status*, using measures based on the epidemiology of the *disease* under consideration to prevent spread of the causative pathogenic agent into a free country or *free zone*. These measures may include, but are not limited to, *vaccination*, movement control and an intensified degree of *surveillance*.

Qualitative risk assessment

means an assessment where the outputs on the likelihood of the outcome or the magnitude of the consequences are expressed in qualitative terms such as 'high', 'medium', 'low' or 'negligible'.

Quality

is defined by International Standard ISO 8402 as 'the totality of characteristics of an entity that bear on its ability to satisfy stated and implied needs'.

Quantitative risk assessment

means an assessment where the outputs of the *risk assessment* are expressed numerically.

Quarantine station

means an establishment under the control of the *Veterinary Authority* where *animals* are maintained in isolation with no direct or indirect contact with other *animals*, to ensure that there is no transmission of specified pathogen(s) outside the establishment while the *animals* are undergoing observation for a specified length of time and, if appropriate, testing and treatment.

Registration

is the action by which information on *animals* (such as identification, animal health, movement, certification, epidemiology, *establishments*) is collected, recorded, securely stored and made appropriately accessible and able to be utilised by the *Competent Authority*.

Resting point

means a place where the *journey* is interrupted to rest, feed or water the *animals*; the *animals* may remain in the *vehicle/vessel* or *container*, or be unloaded for these purposes.

Restraint

means the application to an *animal* of any procedure designed to restrict its movements.

Risk

means the likelihood of the occurrence and the likely magnitude of the biological and economic consequences of an adverse event or effect to animal or human health.

Risk analysis

means the process composed of *hazard identification*, *risk assessment*, *risk management* and *risk communication*.

Risk assessment

means the evaluation of the likelihood and the biological and economic consequences of entry, establishment and spread of a *hazard* within the territory of an *importing country*.

Risk communication

is the interactive transmission and exchange of information and opinions throughout the *risk analysis* process concerning *risk*, *risk*-related factors and *risk* perceptions among *risk* assessors, *risk* managers, *risk* communicators, the general public and other interested parties.

Risk management

means the process of identifying, selecting and implementing measures that can be applied to reduce the level of *risk*.

Sanitary measure

means a measure, such as those described in various chapters of the *Terrestrial Code*, destined to protect animal or human health or life within the territory of the OIE Member from *risks* arising from the entry, establishment and/or spread of a *hazard*.

Slaughter

means any procedure which causes the *death* of an *animal* by bleeding.

Slaughterhouse/abattoir

means premises, including facilities for moving or lairaging *animals*, used for the *slaughter* of *animals* to produce animal products and approved by the *Veterinary Services* or other *Competent Authority*.

Space allowance

means the measure of the floor area and height allocated per individual or body weight of *animals*.

Specific surveillance

means the *surveillance* targeted to a specific *disease* or *infection*.

Stamping-out policy

means carrying out under the authority of the *Veterinary Authority*, on confirmation of a *disease*, the *killing* of the *animals* which are affected and those suspected of being affected in the *herd* and, where appropriate, those in other *herds* which have been exposed to *infection* by direct animal to animal contact, or by indirect contact of a kind likely to cause the transmission of the causal pathogen. All susceptible *animals*, vaccinated or unvaccinated, on an infected premises should be killed and their carcasses destroyed by burning or burial, or by any other method which will eliminate the spread of *infection* through the carcasses or products of the *animals* killed.

This policy should be accompanied by the cleansing and *disinfection* procedures defined in the *Terrestrial Code*.

The terms *modified stamping-out policy* should be used in communications to the OIE whenever the above animal health measures are not implemented in full and details of the modifications should be given.

Stocking density

means the number or body weight of *animals* per unit area on a *vehicle/vessel* or *container*.

Stunning

means any mechanical, electrical, chemical or other procedure which causes immediate loss of consciousness; when used before *slaughter*, the loss of consciousness lasts until *death* from the *slaughter* process; in the absence of *slaughter*, the procedure would allow the *animal* to recover consciousness.

Subpopulation

means a distinct part of a *population* identifiable according to specific common animal health characteristics.

Surveillance

means the systematic ongoing collection, collation, and analysis of information related to animal health and the timely dissemination of information to those who need to know so that action can be taken.

Terrestrial Code

means the OIE *Terrestrial Animal Health Code*.

Terrestrial Manual

means the OIE *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals*.

Transit country

means a country through which *commodities* destined for an *importing country* are transported or in which a stopover is made at a *border post*.

Transparency

means the comprehensive documentation of all data, information, assumptions, methods, results, discussion and conclusions used in the *risk analysis*. Conclusions should be supported by an objective and logical discussion and the document should be fully referenced.

Transport

means the procedures associated with the carrying of *animals* for commercial purposes from one location to another by any means.

Transporter

means the person licensed by the *Competent Authority* to transport *animals*.

Travel

means the movement of a *vehicle/vessel* or *container* carrying *animals* from one location to another.

Unit

means an individually identifiable element used to describe, for example, the members of a *population* or the elements selected when sampling; examples of *units* include individual *animals*, *herds*, *flocks* and *apiaries*.

Vaccination

means the successful immunisation of susceptible *animals* through the administration, according to the manufacturer's instructions and the *Terrestrial Manual*, where relevant, of a vaccine comprising antigens appropriate to the *disease* to be controlled.

Vector

means an insect or any living carrier that transports an infectious agent from an infected individual to a susceptible individual or its food or immediate surroundings. The organism may or may not pass through a development cycle within the *vector*.

Vehicle/vessel

means any means of conveyance including train, truck, aircraft or ship that is used for carrying *animal(s)*.

Veterinarian

means a person registered or licensed by the relevant *veterinary statutory body* of a country to practice veterinary medicine/science in that country.

Veterinary Authority

means the Governmental Authority of an OIE Member, comprising *veterinarians*, other professionals and para-professionals, having the responsibility and competence for ensuring or supervising the implementation of animal health and *welfare* measures, international veterinary certification and other standards and recommendations in the *Terrestrial Code* in the whole territory.

Veterinary legislation

means laws, regulations and all associated legal instruments that pertain to the veterinary domain.

Veterinary para-professional

means a person who, for the purposes of the *Terrestrial Code*, is authorised by the *veterinary statutory body* to carry out certain designated tasks (dependent upon the category of *veterinary para-professional*) in a territory, and delegated to them under the responsibility and direction of a *veterinarian*. The tasks for each category of *veterinary para-professional* should be defined by the *veterinary statutory body* depending on qualifications and training, and according to need.

Veterinary Services

means the governmental and non-governmental organisations that implement animal health and *welfare* measures and other standards and recommendations in the *Terrestrial Code* and the OIE *Aquatic Animal Health Code* in the territory. The Veterinary Services are under the overall control and direction of the *Veterinary Authority*. Private sector organisations, *veterinarians*, *veterinary paraprofessionals* or aquatic animal health professionals are normally accredited or approved by the *Veterinary Authority* to deliver the delegated functions.

Veterinary statutory body

means an autonomous authority regulating *veterinarians* and *veterinary para-professionals*.

Wild animal

means an *animal* that has a phenotype unaffected by human selection and lives independent of direct human supervision or control.

Wildlife

means *feral animals*, *captive wild animals* and *wild animals*.

Zone/region

means a clearly defined part of a territory containing an animal *subpopulation* with a distinct health status with respect to a specific *disease* for which required *surveillance*, control and biosecurity measures have been applied for the purpose of *international trade*.

Zoonosis

means any *disease* or *infection* which is naturally transmissible from *animals* to humans.

SECTION 8.

MULTIPLE SPECIES

CHAPTER 8.1.

ANTHRAX

Article 8.1.1.

General provisions

This chapter is intended to manage the human and animal health risks associated with the presence of *Bacillus anthracis* (*B. anthracis*) in *commodities* and the environment.

There is no evidence that anthrax is transmitted by *animals* before the onset of clinical and pathological signs. Early detection of *outbreaks*, quarantine of affected premises, destruction of diseased *animals* and fomites, and implementation of appropriate sanitary procedures at *abattoirs* and dairy factories will ensure the safety of products of animal origin intended for human consumption.

For the purposes of the *Terrestrial Code*, the *incubation period* for anthrax shall be 20 days.

Anthrax should be notifiable in the whole country.

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

When authorising import or transit of *commodities* covered in the chapter, with the exception of those listed in Article 8.1.2., *Veterinary Authorities* should require the conditions prescribed in this chapter.

Article 8.1.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any anthrax related conditions: semen and embryos collected and processed in accordance with Chapters 4.5., 4.6., 4.7., 4.8. and 4.9., as relevant.

Article 8.1.3.

Recommendations for the importation of ruminants, equines and pigs

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

- 1) showed no clinical sign of anthrax on the day of shipment;

AND

- 2) were kept for the 20 days prior to shipment in an *establishment* where no case of anthrax was officially declared during that period; or

- 3) were vaccinated, not less than 20 days and not more than 12 months prior to shipment in accordance with the *Terrestrial Manual*.

Article 8.1.4.

Recommendations for the importation of fresh meat and meat products destined for human consumption

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

- 1) have shown no sign of anthrax during ante- and post-mortem inspections; and
- 2) were not vaccinated against anthrax using live vaccine during the 14 days prior to *slaughter* or a longer period depending on the manufacturer's recommendations; and
- 3) come from *establishments* that are not placed under movement restrictions for the control of anthrax and where there has been no case of anthrax during the 20 days prior to *slaughter*.

Article 8.1.5.

Recommendations for the importation of hides, skins and hair (from ruminants, equines and pigs)

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

- 1) the products originate from *animals* that:
 - a) have shown no sign of anthrax during ante- and post-mortem inspections; and
 - b) come from *establishments* that are not placed under movement restrictions for the control of anthrax;

OR

- 2) hair from ruminants or equines has been treated in accordance with the recommendations in Article 8.1.11.

Article 8.1.6.

Recommendations for the importation of wool

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

- 1) originates from live *animals*; and
- 2) originates from *animals* that, at the time of shearing, were part of a *flock* that was not subject to movement restrictions for the control of anthrax;

OR

- 3) has been treated in accordance with the recommendations in Article 8.1.11.

Article 8.1.7.

Recommendations for the importation of milk and milk products intended for human consumption

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

- 1) the *milk* originates from *animals* showing no clinical sign of anthrax at the time of milking;

- 2) if the *milk* originates from *herds* or *flocks* that have had a case of anthrax within the previous 20 days, it has been chilled promptly and processed using a heat treatment at least equivalent to pasteurisation.

Article 8.1.8.

Recommendations for the importation of bristles (from pigs)

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

- 1) have shown no sign of anthrax during ante- and post-mortem inspections; and
- 2) come from *establishments* that are not placed under movement restrictions for the control of anthrax;

OR

- 3) have been processed to ensure the destruction of *B. anthracis* by boiling for 60 minutes.

Article 8.1.9.

Procedures for the inactivation of *B. anthracis* spores in skins and trophies from wild animals

In situations in which skins and trophies from *wild animals* may be contaminated with *B. anthracis* spores, the following *disinfection* procedure is recommended:

- 1) fumigation with ethylene oxide 500 mg/litre, at relative humidity 20–40 percent, at 55°C for 30 minutes; or
- 2) fumigation with formaldehyde 400 mg/m³ at relative humidity 30 percent, at >15°C for 4 hours; or
- 3) gamma irradiation with a dose of 40 kiloGray.

Article 8.1.10.

Procedures for the inactivation of *B. anthracis* spores in bone-meal and meat-and-bone meal

In situations where raw materials used to produce bone meal or *meat-and-bone meal* may be contaminated with *B. anthracis* spores, the following inactivation procedures should be used:

- 1) the raw material should be reduced to a maximum particle size of 50 mm before heating; and
- 2) the raw material should be subjected to moist heat at one of the following temperature and time regimes:
 - a) 105°C for at least 8 minutes; or
 - b) 100°C for at least 10 minutes; or
 - c) 95°C for at least 25 minutes; or
 - d) 90°C for at least 45 minutes;

OR

- 3) the raw material should be subjected to dry heat at one of the following temperature and time regimes:
 - a) 130°C for at least 20 minutes; or
 - b) 125°C for at least 25 minutes; or
 - c) 120°C for at least 45 minutes;

OR

- 4) an industrial process demonstrated to be of equivalent efficacy.

Article 8.1.11.

Procedures for the inactivation of *B. anthracis* spores in wool and hair

In situations in which wool or hair may be contaminated with *B. anthracis* spores, the following procedures are recommended:

- 1) gamma irradiation with a dose of 25 kiloGray; or
 - 2) a five-step washing procedure:
 - a) immersion in 0.25–0.3 percent soda liquor for 10 minutes at 40.5°C;
 - b) immersion in soap liquor for 10 minutes at 40.5°C;
 - c) immersion in 2 percent formaldehyde solution for 10 minutes at 40.5°C;
 - d) a second immersion in 2 percent formaldehyde solution for 10 minutes at 40.5°C;
 - e) rinsing on cold water followed by drying in hot air.
-

CHAPTER 8.2.

INFECTION WITH AUJESZKY'S DISEASE VIRUS

Article 8.2.1.

General provisions

Pigs are the natural host for Aujeszky's disease (AD) virus, although it can infect cattle, sheep, cats, dogs and rats causing fatal *disease*. The definition of pig includes all varieties of *Sus scrofa*, both domestic and wild.

For the purposes of the *Terrestrial Code*, AD is defined as an *infection* of domestic pigs or captive wild pigs, which are under direct human supervision or control.

For the purposes of this chapter, a distinction is made between domestic pig and captive wild pig populations on the one hand, and wild pig and feral pig populations on the other hand.

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

A Member should not impose trade bans in response to a notification of *infection* with AD virus in wild and feral pigs according to Article 1.1.3. of the *Terrestrial Code*.

When authorising import or transit of the *commodities* covered in the chapter, with the exception of those listed in Article 8.2.3., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the AD status of the *exporting country or zone*.

Article 8.2.2.

Determination of the AD status of a country or zone

The AD free or provisionally free status of a country or *zone* can only be determined after considering the following criteria, as applicable:

- 1) AD is notifiable in the whole country, and all clinical signs suggestive of AD should be subjected to field and laboratory investigations;
- 2) an on-going awareness programme should be in place to encourage reporting of all cases suggestive of AD;
- 3) the *Veterinary Authority* should have current knowledge of, and authority over, all domestic and captive wild pig *establishments* in the country or *zone*;
- 4) the *Veterinary Authority* should have current knowledge about the population and habitat of wild and feral pigs in the country or *zone*;
- 5) appropriate *surveillance*, capable of detecting the presence of *infection* even in the absence of clinical signs, is in place; this may be achieved through a *surveillance* programme in accordance with Chapter 1.4.

Article 8.2.3.

Safe commodities

When authorising import or transit of the following *commodities* and any products made from these, *Veterinary Authorities* should not require any AD related conditions, regardless of the AD status of the *exporting country or zone*:

- 1) *fresh meat* of domestic and wild pigs not containing offal (head, and thoracic and abdominal viscera);
- 2) *meat products* of domestic and wild pigs not containing offal (head, and thoracic and abdominal viscera);

- 3) products of animal origin not containing offal (head, and thoracic and abdominal viscera).

Article 8.2.4.

AD free country or zone

1. Qualification

- a) A country or *zone* may be considered free from the *disease* without formally applying a specific *surveillance* programme (historical freedom) if the *disease* has not been reported for at least 25 years, and if for at least the past 10 years:
- i) it has been a *notifiable disease*;
 - ii) an early detection system has been in place;
 - iii) measures to prevent the introduction of the AD virus into the country or *zone* have been in place;
 - iv) no *vaccination* against the *disease* has been carried out;
 - v) *infection* is not known to be established in wild and feral pigs, or appropriate measures have been implemented to prevent any transmission of the AD virus from wild and feral pigs to domestic and captive wild pigs.
- b) A country or *zone* which does not meet the conditions of the above paragraph may be considered free from AD when:
- i) animal health regulations to control the movement of *commodities* with the exception of those listed in Article 8.2.3. in order to prevent the introduction of *infection* into the *establishments* of the country or *zone* have been in place for at least two years;
 - ii) *vaccination* against AD has been banned for all domestic and captive wild pigs in the country or *zone* for at least two years unless there are means, validated to OIE standards (Chapter 2.1.2. of the *Terrestrial Manual*), of distinguishing between vaccinated and infected pigs;
 - iii) if AD has never been reported in the country or *zone*, serological surveys, with negative results, have been conducted on a representative sample of all pig *establishments* in conformity with the recommendations in Chapter 1.4. at an acceptable level of confidence, no more than three years prior to qualification; the serological surveys should be directed at the detection of antibodies to the whole virus, and based on the breeding pig population or, for *establishments* that contain no breeding pigs, on a comparable number of fattening pigs; or
 - iv) if AD has been reported in the country or *zone*, a *surveillance* and control programme has been in place to detect every infected *establishment* and eradicate AD from it; the *surveillance* programme should be carried out in conformity with the recommendations in Chapter 1.4. and demonstrate that no *establishments* within the country or *zone* have had any clinical, virological or serological evidence of AD for at least two years.
 - v) In countries or *zones* with wild and feral pigs, measures should be implemented to prevent any transmission of the AD virus from wild and feral pigs to domestic and captive wild pigs.

2. Maintenance of free status

In order to maintain its free status, a country or *zone* should comply with the following requirements:

- a) periodic serological surveys directed at the detection of antibodies to the whole AD virus should be carried out on a statistically significant number of breeding pigs, in conformity with the recommendations in Chapter 1.4.;
- b) the importation of the *commodities* with the exception of those listed in Article 8.2.3. into the country or *zone* is carried out in conformity with the import conditions contained in the relevant articles of the present chapter;

- c) the ban on AD *vaccination* remains in force;
- d) appropriate measures aimed at preventing the transmission of the AD virus from wild and feral pigs to domestic and captive wild pigs remain in force.

3. Recovery of free status

Should an AD *outbreak* occur in an *establishment* of a free country or *zone*, the status of the country or *zone* may be restored if either:

- a) all the pigs in the infected *epidemiological units* have been slaughtered; and, during and after the application of this measure, an epidemiological investigation including clinical examination, and serological or virological testing has been carried out in all pig *establishments* which have been directly or indirectly in contact with the infected *establishment* and in all pig *establishments* located within a prescribed radius from the infected *epidemiological units*, demonstrating that these *establishments* are not infected; or
- b) *vaccination* with gE- deleted vaccines has been applied and:
 - i) a serological testing procedure (differential ELISA) has been implemented in the *establishments* where *vaccination* has been applied to demonstrate the absence of *infection*;
 - ii) the movement of pigs from these *establishments* has been banned, except for immediate *slaughter*, until the above procedure has demonstrated the absence of *infection*;
 - iii) during and after the application of the measures described in points i) to ii) above, a thorough epidemiological investigation including clinical examination and serological or virological testing has been carried out in all pig *establishments* which have been directly or indirectly in contact with the infected *establishment* and in all pig *establishments* located within a prescribed radius from the *outbreak*, demonstrating that these *establishments* are not infected.

Article 8.2.5.

AD provisionally free country or zone

1. Qualification

A country or *zone* may be considered as provisionally free from AD if the following conditions are complied with:

- a) animal health regulations to control the movement of *commodities* with the exception of those listed in Article 8.2.3. in order to prevent the introduction of *infection* into the *establishments* of the country or *zone* have been in place for at least two years;
- b) if AD has never been reported in the country or *zone*, a serological survey, with negative results, has been conducted on a representative sample of all pig *establishments* in conformity with the recommendations in Chapter 1.4. (but not at an acceptable level of confidence); the serological survey should be directed at the detection of antibodies to the whole virus, and based on the breeding pig population or, for *establishments* that contain no breeding pigs, on a comparable number of fattening pigs; or
- c) if AD has been reported in the country or *zone*, a *surveillance* and control programme has been in place to detect infected *establishments* and eradicate AD from these *establishments*, the *herd* prevalence rate in the country or *zone* has not exceeded 1 percent for at least three years (the sampling procedure described in point 1e) of the definition of 'AD free establishment' should be applied within the *establishments* of the country or *zone*), and at least 90 percent of the *establishments* in the country or *zone* are qualified free;
- d) in countries or *zones* with wild and feral pigs, appropriate measures should be taken to prevent any transmission of the AD virus between wild and feral pigs and domestic and captive wild pigs.

2. Maintenance of provisionally free status

In order to maintain its provisionally free status, a country or *zone* should comply with the following requirements:

- a) the measures described in points 1b) and 1d) above should be continued;
- b) the percentage of infected *establishments* remains ≤ 1 percent;
- c) the importation of the *commodities* with the exception of those listed in Article 8.2.3. into the country or *zone* is carried out in conformity with the import conditions contained in the relevant articles of the present chapter.

3. Recovery of provisionally free status

Should the percentage of infected *establishments* exceed 1 percent in a provisionally free country or *zone*, the status of the country or *zone* is cancelled and may be restored only once the percentage of infected *establishments* has remained ≤ 1 percent for at least six months, and this result is confirmed by a serological survey conducted in conformity with point 1c) above.

Article 8.2.6.

AD infected country or zone

For the purposes of this chapter, countries and *zones* which do not fulfil the conditions to be considered free or provisionally free of AD should be considered as infected.

Article 8.2.7.

AD free establishment

1. Qualification

To qualify as free from AD, an *establishment* should satisfy the following conditions:

- a) it is under the control of the *Veterinary Authority*;
- b) no clinical, virological or serological evidence of AD has been found for at least one year;
- c) the introduction of pigs, semen and embryos or ova into the *establishment* is carried out in conformity with the import conditions for these *commodities* contained in the relevant articles of the present chapter;
- d) *vaccination* against AD has not been carried out in the *establishment* for at least 12 months, and any previously vaccinated pigs are free from gE antibodies;
- e) a representative sample of breeding pigs from the *establishment* has been subjected, with negative results, to serological tests to the whole AD virus, applying a sampling procedure set out in conformity with the recommendations in Chapter 1.4.; these tests should have been carried out on two occasions, at an interval of two months; for *establishments* that contain no breeding pigs, the tests should be carried out only once on a comparable number of fattening or weaning pigs;
- f) a *surveillance* and control programme has been in place to detect infected *establishments* located within a prescribed radius from the *establishment* and no *establishment* is known to be infected within this *zone*.

2. Maintenance of free status

For *establishments* located in an infected country or *infected zone*, the testing procedure described in point 1e) above should be carried out every four months.

For *establishments* located in a provisionally free country or *zone*, the testing procedure described in point 1e) above should be carried out every year.

3. Recovery of free status

Should a free *establishment* become infected, or should an *outbreak* occur within a prescribed radius from a free *establishment*, the free status of the *establishment* should be suspended until the following conditions are met:

- a) in the infected *establishment*:
 - i) all the pigs in the *establishment* have been slaughtered, or
 - ii) at least 30 days after removal of all infected *animals*, all breeding *animals* have been subjected to a serological test to the whole AD virus, with negative results, on two occasions, at an interval of 2 months;
- b) in other *establishments* located within the prescribed radius: a number of breeding pigs from each *establishment* has been subjected, with negative results, to serological tests to the whole AD virus (non vaccinated *establishments*) or to gE antibodies (vaccinated *establishments*), applying the sampling procedure described in point 1e) above.

Article 8.2.8.

Recommendations for importation from AD free countries or zonesFor domestic and captive wild pigs

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

- 1) showed no clinical sign of AD on the day of shipment;
- 2) come from an *establishment* located in an AD free country or *zone*;
- 3) have not been vaccinated against AD.

Article 8.2.9.

Recommendations for importation from AD provisionally free countries or zonesFor domestic and captive wild pigs for breeding or rearing

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

- 1) showed no clinical sign of AD on the day of shipment;
- 2) have been kept exclusively in AD free *establishments* since birth;
- 3) have not been vaccinated against AD;
- 4) were subjected to a serological test to the whole AD virus, with negative results, within 15 days prior to shipment.

Article 8.2.10.

Recommendations for importation from AD infected countries or zones

For domestic and captive wild pigs for breeding or rearing

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

- 1) showed no clinical sign of AD on the day of shipment;
- 2) were kept exclusively in AD free *establishments* since birth;
- 3) have not been vaccinated against AD;
- 4) were isolated in the *establishment* of origin or a *quarantine station*, and were subjected to a serological test to the whole AD virus, with negative results, on two occasions, at an interval of not less than 30 days between each test, the second test being performed during the 15 days prior to shipment.

Article 8.2.11.

Recommendations for importation from AD provisionally free countries or zones or AD infected countries or zones

For domestic and captive wild pigs for slaughter

The pigs should be transported directly from the *place of shipment* to the *slaughterhouse/abattoir* from immediate *slaughter*.

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

- 1) a *surveillance* and control programme is in place in the country or *zone* to detect infected *establishments* and eradicate AD;
- 2) the *animals*:
 - a) are not being eliminated as part of an eradication programme;
 - b) showed no clinical sign of AD on the day of shipment; and
 - i) have been kept exclusively in AD free *establishments* since birth; or
 - ii) have been vaccinated against AD at least 15 days prior to shipment.

Article 8.2.12.

Recommendations for importation from AD free countries or zones

For wild and feral swine

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

- 1) showed no clinical sign of AD on the day of shipment;
- 2) were captured in an AD free country or *zone*;
- 3) have not been vaccinated against the *disease*;
- 4) were isolated in a *quarantine station*, and were subjected to a serological test to the whole AD virus, with negative results, on two occasions, at an interval of not less than 30 days between each test, the second test being performed during the 15 days prior to shipment.

Article 8.2.13.

Recommendations for importation from AD free countries or zonesFor semen of pigs

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

- 1) the donor *animals*:
 - a) showed no clinical sign of AD on the day of collection of the semen;
 - b) were kept in an *establishment* or *artificial insemination centre* located in an AD free country or *zone* at the time of semen collection;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 8.2.14.

Recommendations for importation from AD provisionally free countries or zonesFor semen of pigs

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

- 1) the donor *animals*:
 - a) have been kept for at least four months prior to semen collection in an *artificial insemination centre* which has the status of AD free *establishment*, and where all boars are subjected to a serological test to the whole AD virus, with negative results, every four months;
 - b) showed no clinical sign of AD on the day of collection;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 8.2.15.

Recommendations for importation from AD infected countries or zonesFor semen of pigs

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

- 1) the donor *animals*:
 - a) were kept in an AD free *establishment* for at least six months prior to entering the *artificial insemination centre*;
 - b) have been kept for at least four months prior to semen collection in the *artificial insemination centre* which has the status of AD free *establishment*, and where all boars are subjected to a serological test to the whole AD virus, with negative results, every four months;
 - c) were subjected to a serological test to the whole AD virus, with negative results, within 10 days prior to or 21 days after semen collection;
 - d) showed no clinical sign of AD on the day of collection;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 8.2.16.

Recommendations for importation from AD free countries or zones

For *in vivo* derived embryos of pigs

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

- 1) the donor females:
 - a) showed no clinical sign of AD on the day of collection of the embryos;
 - b) were kept in an *establishment* located in an AD free country or *zone* prior to collection;
- 2) the embryos were collected, processed and stored in conformity with the provisions of Chapters 4.7. and 4.9., as relevant.

Article 8.2.17.

Recommendations for importation from AD provisionally free countries or zones

For *in vivo* derived embryos of pigs

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

- 1) the donor females:
 - a) showed no clinical sign of AD on the day of collection of the embryos;
 - b) were kept in an AD free *establishment* for at least three months prior to collection;
- 2) the embryos were collected, processed and stored in conformity with the provisions of Chapters 4.7. and 4.9., as relevant.

Article 8.2.18.

Recommendations for importation from AD infected countries or zones

For *in vivo* derived embryos of pigs

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

- 1) the donor females:
 - a) showed no clinical sign of AD on the day of collection of the embryos;
 - b) were kept in an AD free *establishment* for at least three months prior to collection;
 - c) were subjected to a serological test to the whole AD virus, with negative results, within ten days prior to collection;
- 2) the embryos were collected, processed and stored in conformity with the provisions of Chapters 4.7. and 4.9., as relevant.

Article 8.2.19.

Recommendations for importation from AD free countries or zones

For offal (head, and thoracic and abdominal viscera) of pigs or products containing pig offal

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the entire consignment of offal or products containing pig offal comes from *animals* which come from *establishments* located in an AD free country or *zone*.

Article 8.2.20.

Recommendations for importation from AD provisionally free countries or zones or from AD infected countries or zones

For offal (head, and thoracic and abdominal viscera) of pigs

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

- 1) which have been kept in an AD free *establishment* since birth;
- 2) which have not been in contact with *animals* from *establishments* not considered free from AD during their transport to the approved *abattoir* and therein.

Article 8.2.21.

Recommendations for importation from AD provisionally free countries or zones or from AD infected countries or zones

For products containing pig offal (head, and thoracic and abdominal viscera)

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

- 1) either the entire consignment of offal used to prepare the products complied with the conditions referred to in Article 8.2.20.; or
 - 2) the products have been processed to ensure the destruction of the AD virus; and
 - 3) the necessary precautions were taken after processing to avoid contact of the products with any source of AD virus.
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CHAPTER 8.3.

BLUETONGUE

Article 8.3.1.

General provisions

For the purposes of the *Terrestrial Code*, the *infective period* for bluetongue virus (BTV) shall be 60 days.

Historically, the global BTV distribution has been confined between the latitudes of approximately 53°N and north of 34°S with a recent extension in Northern Europe.

In the absence of clinical *disease* in a country or *zone*, its BTV status should be determined by an ongoing *surveillance* programme (in accordance with Articles 8.3.16. to 8.3.21.). The programme may need to be adapted to target parts of the country or *zone* at a higher risk due to historical, geographical and climatic factors, ruminant population data and *Culicoides* ecology, or proximity to enzootic or incursional zones as described in Articles 8.3.16. to 8.3.21.

All countries or *zones* adjacent to a country or *zone* not having free status should be subjected to similar *surveillance*. The *surveillance* should be carried out over a distance of at least 100 kilometres from the border with that country or *zone*, but a lesser distance could be acceptable if there are relevant ecological or geographical features likely to interrupt the transmission of BTV or a bluetongue *surveillance* programme (in accordance with Articles 8.3.16. to 8.3.21.) in the country or *zone* not having free status supports a lesser distance.

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

When authorising import or transit of the *commodities* covered in the chapter, with the exception of those listed in Article 8.3.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the BTV status of the ruminant population of the *exporting country or zone*.

Article 8.3.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any BTV related conditions regardless of the BTV status of the ruminant population of the *exporting country or zone*:

- 1) *milk* and *milk products*;
- 2) *meat* and *meat products*;
- 3) hides and skins;
- 4) wool and fibre;
- 5) *in vivo* derived bovine embryos and oocytes collected, processed and stored in conformity with the provisions of Chapter 4.7. except for BTV8 (under study).

Article 8.3.3.

BTV free country or zone

- 1) A country or a *zone* may be considered free from BTV when bluetongue is notifiable in the whole country and either:
 - a) a *surveillance* programme in accordance with Articles 8.3.16. to 8.3.21. has demonstrated no evidence of BTV in the country or *zone* during the past two years; or

- b) an ongoing *surveillance* programme has demonstrated no evidence of *Culicoides* in the country or *zone*.
- 2) A BTV free country or *zone* in which ongoing *vector surveillance*, performed according to point 5 of Article 8.3.19., has found no evidence of *Culicoides* will not lose its free status through the importation of vaccinated, seropositive or infective *animals*, or semen or embryos/ova from infected countries or *infected zones*.
- 3) A BTV free country or *zone* in which *surveillance* has found evidence that *Culicoides* are present will not lose its free status through the importation of vaccinated or seropositive *animals* from infected countries or *infected zones*, provided:
- a) the *animals* have been vaccinated, at least 60 days prior to dispatch, in accordance with the *Terrestrial Manual* with a vaccine which covers all serotypes whose presence in the source population has been demonstrated through a *surveillance* programme in accordance with Articles 8.3.16. to 8.3.21., and the *animals* are identified in the accompanying certification as having been vaccinated; or
 - b) the *animals* are not vaccinated and, at least 60 days prior to dispatch, are demonstrated to have specific antibodies against the bluetongue virus serotypes whose presence has been demonstrated in the *exporting country or zone*.
- 4) A BTV free country or *zone* adjacent to an infected country or *infected zone* should include a *zone* as described in Article 8.3.1. in which *surveillance* is conducted in accordance with Articles 8.3.16. to 8.3.21. *Animals* within this *zone* should be subjected to continuing *surveillance*. The boundaries of this *zone* should be clearly defined, and should take account of geographical and epidemiological factors that are relevant to BTV transmission.

Article 8.3.4.

BTV seasonally free zone

A BTV seasonally free *zone* is a part of an infected country or an *infected zone* for which for part of a year, *surveillance* demonstrates no evidence either of BTV transmission or of adult *Culicoides*.

For the application of Articles 8.3.7., 8.3.10. and 8.3.13., the seasonally free period is taken to commence the day following the last evidence of BTV transmission (as demonstrated by the *surveillance* programme), and of the cessation of activity of adult *Culicoides*.

For the application of Articles 8.3.7., 8.3.10. and 8.3.13., the seasonally free period is taken to conclude either:

- 1) at least 28 days before the earliest date that historical data show bluetongue virus activity has recommenced; or
- 2) immediately if current climatic data or data from a *surveillance* programme indicate an earlier resurgence of activity of adult *Culicoides*.

A BTV seasonally free *zone* in which ongoing *surveillance* has found no evidence that *Culicoides* are present will not lose its free status through the importation of vaccinated, seropositive or infective *animals*, or semen or embryos/ova from infected countries or *infected zones*.

Article 8.3.5.

BTV infected country or zone

For the purposes of this chapter, a BTV infected country or *infected zone* is a clearly defined area where evidence of BTV has been reported during the past two years. Such a country or *zone* may contain a BTV seasonally free *zone*.

Article 8.3.6.

Recommendations for importation from BTV free countries or zones

For ruminants and other BTV susceptible herbivores

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

- 1) the *animals* were kept in a BTV free country or *zone* since birth or for at least 60 days prior to shipment; or
- 2) the *animals* were kept in a BTV free country or *zone* for at least 28 days, then were subjected, with negative results, to a serological test to detect antibody to the BTV group according to the *Terrestrial Manual* and remained in the BTV free country or *zone* until shipment; or
- 3) the *animals* were kept in a BTV free country or *zone* for at least seven days, then were subjected, with negative results, to an agent identification test according to the *Terrestrial Manual*, and remained in the BTV free country or *zone* until shipment; or
- 4) the *animals*:
 - a) were kept in a BTV free country or *zone* for at least seven days;
 - b) were vaccinated, at least 60 days before the introduction into the free country or *zone*, in accordance with the *Terrestrial Manual* against all serotypes whose presence in the source population has been demonstrated through a *surveillance* programme as described in Articles 8.3.16. to 8.3.21.;
 - c) were identified as having been vaccinated; and
 - d) remained in the BTV free country or *zone* until shipment;

AND

- 5) if the *animals* were exported from a free *zone* within an infected country, either:
 - a) did not transit through an *infected zone* during transportation to the *place of shipment*; or
 - b) were protected from *Culicoides* attacks at all times when transiting through an *infected zone*; or
 - c) had been vaccinated in accordance with point 4 above.

Article 8.3.7.

Recommendations for importation from BTV seasonally free zones

For ruminants and other BTV susceptible herbivores

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

- 1) were kept during the seasonally free period in a BTV seasonally free *zone* since birth or for at least 60 days prior to shipment; or
- 2) were kept during the BTV seasonally free period in a BTV seasonally free *zone* for at least 28 days prior to shipment, and were subjected during the residence period in the *zone* to a serological test to detect antibody to the BTV group according to the *Terrestrial Manual*, with negative results, carried out at least 28 days after the commencement of the residence period; or
- 3) were kept during the BTV seasonally free period in a BTV seasonally free *zone* for at least 14 days prior to shipment, and were subjected during the residence period in the *zone* to an agent identification test according to the *Terrestrial Manual*, with negative results, carried out at least 14 days after the commencement of the residence period; or
- 4) were kept during the seasonally free period in a BTV seasonally free *zone* and were vaccinated, at least 60 days before the introduction into the free country or *zone*, in accordance with the *Terrestrial Manual* against all serotypes whose presence in the source population has been demonstrated through a

surveillance programme in accordance with Articles 8.3.16. to 8.3.21. and were identified as having been vaccinated and remained in the BTV free country or *zone* until shipment;

AND

- 5) either:
 - a) did not transit through an *infected zone* during transportation to the *place of shipment*; or
 - b) were protected from *Culicoides* attacks at all times when transiting through an *infected zone*; or
 - c) were vaccinated in accordance with point 4 above.

Article 8.3.8.

Recommendations for importation from BTV infected countries or zones

For ruminants and other BTV susceptible herbivores

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

- 1) were protected from *Culicoides* attacks in a *vector-protected establishment* for at least 60 days prior to shipment and during transportation to the *place of shipment*; or
- 2) were protected from *Culicoides* attacks in a *vector-protected establishment* for at least 28 days prior to shipment and during transportation to the *place of shipment*, and were subjected during that period to a serological test according to the *Terrestrial Manual* to detect antibody to the BTV group, with negative results, carried out at least 28 days after introduction into the *vector-protected establishment*; or
- 3) were protected from *Culicoides* attacks in a *vector-protected establishment* for at least 14 days prior to shipment and during transportation to the *place of shipment*, and were subjected during that period to an agent identification test according to the *Terrestrial Manual*, with negative results, carried out at least 14 days after introduction into the *vector-protected establishment*; or
- 4) were vaccinated, at least 60 days before shipment, in accordance with the *Terrestrial Manual* against all serotypes whose presence in the source population has been demonstrated through a *surveillance* programme in accordance with Articles 8.3.16. to 8.3.21., and were identified in the accompanying certification as having been vaccinated or, if demonstrated to have antibodies, have been protected from vectors for at least 60 days prior to shipment; or
- 5) demonstrated to have antibodies for at least 60 days prior to dispatch against all serotypes whose presence has been demonstrated in the source population through a *surveillance* programme in accordance with Articles 8.3.16. to 8.3.21.

Article 8.3.9.

Recommendations for importation from BTV free countries or zones

For semen of ruminants and other BTV susceptible herbivores

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

- 1) the donor *animals*:
 - a) were kept in a BTV free country or *zone* for at least 60 days before commencement of, and during, collection of the semen; or
 - b) were subjected to a serological test according to the *Terrestrial Manual* to detect antibody to the BTV group, between 21 and 60 days after the last collection for this consignment, with negative results; or

- c) were subjected to an agent identification test according to the *Terrestrial Manual* on blood samples collected at commencement and conclusion of, and at least every 7 days (virus isolation test) or at least every 28 days (PCR test) during, semen collection for this consignment, with negative results;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 8.3.10.

Recommendations for importation from BTV seasonally free zones

For semen of ruminants and other BTV susceptible herbivores

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

- 1) the donor *animals*:
 - a) were kept during the BTV seasonally free period in a seasonally free *zone* for at least 60 days before commencement of, and during, collection of the semen; or
 - b) were subjected to a serological test according to the *Terrestrial Manual* to detect antibody to the BTV group, with negative results, at least every 60 days throughout the collection period and between 21 and 60 days after the final collection for this consignment; or
 - c) were subjected to an agent identification test according to the *Terrestrial Manual* on blood samples collected at commencement and conclusion of, and at least every 7 days (virus isolation test) or at least every 28 days (PCR test) during, semen collection for this consignment, with negative results;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 8.3.11.

Recommendations for importation from BTV infected countries or zones

For semen of ruminants and other BTV susceptible herbivores

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

- 1) the donor *animals*:
 - a) were kept in a *vector-protected establishment* for at least 60 days before commencement of, and during, collection of the semen; or
 - b) were subjected to a serological test according to the *Terrestrial Manual* to detect antibody to the BTV group, with negative results, at least every 60 days throughout the collection period and between 21 and 60 days after the final collection for this consignment; or
 - c) were subjected to an agent identification test according to the *Terrestrial Manual* on blood samples collected at commencement and conclusion of, and at least every 7 days (virus isolation test) or at least every 28 days (PCR test) during, semen collection for this consignment, with negative results;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 8.3.12.

Recommendations for importation from BTV free countries or zones

For *in vivo* derived embryos of ruminants (other than bovines) and other BTV susceptible herbivores and for *in vitro* produced bovine embryos

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

- 1) the donor females:
 - a) were kept in a BTV free country or *zone* for at least the 60 days prior to, and at the time of, collection of the embryos; or
 - b) were subjected to a serological test according to the *Terrestrial Manual* to detect antibody to the BTV group, between 21 and 60 days after collection, with negative results; or
 - c) were subjected to an agent identification test according to the *Terrestrial Manual* on a blood sample taken on the day of collection, with negative results;
- 2) the embryos were collected, processed and stored in conformity with the provisions of Chapters 4.7., 4.8. and 4.9., as relevant.

Article 8.3.13.

Recommendations for importation from BTV seasonally free zones

For *in vivo* derived embryos/oocytes of ruminants (other than bovines) and other BTV susceptible herbivores and for *in vitro* produced bovine embryos

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

- 1) the donor females:
 - a) were kept during the seasonally free period in a seasonally free *zone* for at least 60 days before commencement of, and during, collection of the embryos/oocytes; or
 - b) were subjected to a serological test according to the *Terrestrial Manual* to detect antibody to the BTV group, between 21 and 60 days after collection, with negative results; or
 - c) were subjected to an agent identification test according to the *Terrestrial Manual* on a blood sample taken on the day of collection, with negative results;
- 2) the embryos/oocytes were collected, processed and stored in conformity with the provisions of Chapters 4.7., 4.8. and 4.9., as relevant.

Article 8.3.14.

Recommendations for importation from BTV infected countries or zones

For *in vivo* derived embryos/oocytes of ruminants (other than bovines) and other BTV susceptible herbivores and for *in vitro* produced bovine embryos

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

- 1) the donor females:
 - a) were kept in a *vector-protected establishment* for at least 60 days before commencement of, and during, collection of the embryos/oocytes; or
 - b) were subjected to a serological test according to the *Terrestrial Manual* to detect antibody to the BTV group, between 21 and 60 days after collection, with negative results; or
 - c) were subjected to an agent identification test according to the *Terrestrial Manual* on a blood sample taken on the day of collection, with negative results;
- 2) the embryos/oocytes were collected, processed and stored in conformity with the provisions of Chapters 4.7., 4.8. and 4.9., as relevant.

Article 8.3.15.

Protecting animals from *Culicoides* attacks1) Vector-protected establishment or facility

The means of protection of the *establishment* or facility should at least comprise the following:

- a) Appropriate physical barriers at entry and exit points, e.g. double-door entry-exit system;
- b) openings of the building are *vector* screened with mesh of appropriate gauge impregnated regularly with an approved insecticide according to the manufacturers' instructions;
- c) *vector surveillance* and control within and around the building;
- d) measures to limit or eliminate breeding sites for *vectors* in the vicinity of the *establishment* or facility;
- e) standard operating procedures, including description of back-up and alarm systems, for operation of the *establishment* or facility and transport of *animals* to the place of *loading*.

2) During transportation

When transporting *animals* through BTV infected countries or *infected zones*, *Veterinary Authorities* should require strategies to protect *animals* from *Culicoides* attacks during transport, taking into account the local ecology of the *vector*.

Potential *risk management* strategies include:

- a) treating *animals* with insect repellents prior to and during transportation;
- b) *loading*, transporting and *unloading animals* at times of low *vector* activity (i.e. bright sunshine, low temperature);
- c) ensuring *vehicles* do not stop en route during dawn or dusk, or overnight, unless the *animals* are held behind insect proof netting;
- d) darkening the interior of the *vehicle*, for example by covering the roof and/or sides of *vehicles* with shadecloth;
- e) *surveillance* for *vectors* at common stopping and offloading points to gain information on seasonal variations;
- f) using historical information and/or information from appropriately verified and validated BTV epidemiological models to identify low risk ports and transport routes.

Article 8.3.16.

Surveillance: introduction

Articles 8.3.16. to 8.3.21. define the principles and provide a guide on the *surveillance* for BT complementary to Chapter 1.4. and for *vectors* complementary to Chapter 1.5., applicable to Members seeking to determine their BT status. This may be for the entire country or *zone*. Guidance for Members seeking free status following an *outbreak* and for the maintenance of BT status is also provided.

BT is a *vector-borne infection* transmitted by different species of *Culicoides* insects in a range of ecosystems. An important component of BT epidemiology is vectorial capacity which provides a measure of *disease risk* that incorporates *vector* competence, abundance, biting rates, survival rates and extrinsic *incubation period*. However, methods and tools for measuring some of these *vector* factors remain to be developed, particularly in a field context. Therefore, *surveillance* for BT should focus on transmission in domestic ruminants.

The impact and epidemiology of BT differ widely in different regions of the world and therefore it is impossible to provide specific recommendations for all situations. It is incumbent upon Members to provide scientific data that explain the epidemiology of BT in the region concerned and adapt the *surveillance* strategies for defining their

infection status (free, seasonally free or infected country or *zone*) to the local conditions. There is considerable latitude available to Members to justify their *infection* status at an acceptable level of confidence.

Surveillance for BT should be in the form of a continuing programme.

Article 8.3.17.

Surveillance: case definition

For the purposes of *surveillance*, a *case* refers to an *animal* infected with BT virus (BTV).

For the purposes of *international trade*, a distinction should be made between a *case* as defined below and an *animal* that is potentially infectious to *vectors*. The conditions for trade are defined in Articles 8.3.1. to 8.3.15. of this chapter.

The purpose of *surveillance* is the detection of virus circulation in a country or *zone* and not determination of the status of an individual *animal* or *herds*. *Surveillance* deals not only with the occurrence of clinical signs caused by BTV, but also with the evidence of *infection* with BTV in the absence of clinical signs.

The following defines the occurrence of BTV *infection*:

- 1) BTV has been isolated and identified as such from an *animal* or a product derived from that *animal*, or
- 2) viral antigen or viral ribonucleic acid (RNA) specific to one or more of the serotypes of BTV has been identified in samples from one or more *animals* showing clinical signs consistent with BT, or epidemiologically linked to a confirmed or suspected *case*, or giving cause for suspicion of previous association or contact with BTV, or
- 3) antibodies to structural or nonstructural proteins of BTV that are not a consequence of *vaccination* have been identified in one or more *animals* that either show clinical signs consistent with BT, or epidemiologically linked to a confirmed or suspected *case*, or give cause for suspicion of previous association or contact with BTV.

Article 8.3.18.

Surveillance: general conditions and methods

- 1) A *surveillance* system in accordance with Chapter 1.4. should be under the responsibility of the *Veterinary Authority*. In particular:
 - a) a formal and ongoing system for detecting and investigating *outbreaks* of *disease* should be in place;
 - b) a procedure should be in place for the rapid collection and transport of samples from suspect *cases* of BT to a *laboratory* for BT diagnosis as described in the *Terrestrial Manual*;
 - c) a system for recording, managing and analysing diagnostic and *surveillance* data should be in place.
- 2) The BT *surveillance* programme should:
 - a) in a country/*zone* free or seasonally free, include an early warning system for reporting suspicious *cases*. Farmers and workers, who have regular contact with domestic ruminants, as well as diagnosticians, should report promptly any suspicion of BT to the *Veterinary Authority*. They should be supported directly or indirectly (e.g. through private *veterinarians* or *Veterinary para-professionals*) by government information programmes and the *Veterinary Authority*. 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 BTV. The rate at which such suspicious *cases* are likely to occur will differ between epidemiological situations and cannot therefore be predicted reliably. All suspected *cases* of BT should be investigated immediately and samples should be taken and submitted to a *laboratory*. This requires that sampling kits and other equipment are available for those responsible for *surveillance*;

- b) conduct random or targeted serological and virological *surveillance* appropriate to the *infection* status of the country or *zone*.

Generally, the conditions to prevent exposure of susceptible *animals* to BTV infected *vectors* will be difficult to apply. However, under specific situations, in establishments such as *artificial insemination centres* or *quarantine stations* exposure to *vectors* may be preventable. The testing requirements for *animals* kept in these facilities are described in Articles 8.3.11. and 8.3.14.

Article 8.3.19.

Surveillance strategies

The target population for *surveillance* aimed at identification of *disease* and/or *infection* should cover susceptible domestic ruminants within the country or *zone*. Active and passive *surveillance* for BTV *infection* should be ongoing. *Surveillance* should be composed of random or targeted approaches using virological, serological and clinical methods appropriate for the *infection* status of the country or *zone*.

The strategy employed may be based on *surveillance* using randomised sampling that would demonstrate the absence of BTV *infection* at an acceptable level of confidence. The frequency of sampling should be dependent on the epidemiological situation. Random *surveillance* is conducted using serological tests described in the *Terrestrial Manual*. Positive serological results may be followed up with virological methods as appropriate.

Targeted *surveillance* (e.g. based on the increased likelihood of *infection* in particular localities or species) may be an appropriate strategy. Virological and serological methods may be used concurrently to define the BTV status of targeted populations.

A Member should justify the *surveillance* strategy chosen as being adequate to detect the presence of BTV *infection* in accordance with Chapter 1.4. and the prevailing epidemiological situation. It may, for example, be appropriate to target clinical *surveillance* at particular species likely to exhibit clinical signs (e.g. sheep). Similarly, virological and serological testing may be targeted to species that rarely show clinical signs (e.g. cattle).

In vaccinated populations, serological and virological *surveillance* is necessary to detect the BTV types circulating to ensure that all circulating types are included in the *vaccination* programme.

If a Member wishes to declare freedom from BTV *infection* in a specific *zone*, the design of the *surveillance* strategy would need to be aimed at the population within the *zone*.

For random surveys, the design of the sampling strategy will need to incorporate epidemiologically appropriate design prevalence. The sample size selected for testing will need to be large enough to detect evidence of *infection* if it were to occur at a predetermined minimum rate. The sample size and expected prevalence determine the level of confidence in the results of the survey. The Member 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 needs to be based on the prevailing or historical epidemiological situation.

Irrespective of the survey approach 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 for the *vaccination/infection* history and the different species in the target population.

Irrespective of the testing system employed, *surveillance* system 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 both supplementary tests and follow-up investigation to collect diagnostic material from the original sampling unit as well as those which may be epidemiologically linked to it.

The principles involved in *surveillance* for *disease/infection* are technically well defined. The design of *surveillance* programmes to prove the absence of BTV *infection/circulation* needs to be carefully followed to avoid producing results that are either insufficiently reliable to be accepted by international trading partners, or excessively costly and logistically complicated. The design of any *surveillance* programme, therefore, requires inputs from professionals competent and experienced in this field.

1. Clinical surveillance

Clinical *surveillance* aims at the detection of clinical signs of BT at the *flock/herd* level. Whereas significant emphasis is placed on the diagnostic value of mass serological screening, *surveillance* based on clinical inspection should not be underrated, particularly during a newly introduced *infection*. In sheep and occasionally goats, clinical signs may include oedema, hyperaemia of mucosal membranes, coronitis and cyanotic tongue.

BT suspects detected by clinical *surveillance* should always be confirmed by *laboratory* testing.

2. Serological surveillance

An active programme of *surveillance* of host populations to detect evidence of BTV transmission is essential to establish BTV status in a country or *zone*. Serological testing of ruminants is one of the most effective methods of detecting the presence of BTV. The species tested depends on the epidemiology of BTV *infection*, and the species available, in the local area. Cattle are usually the most sensitive indicator species. Management variables that may influence likelihood of *infection*, such as the use of insecticides and animal housing, should be considered.

Surveillance may include serological surveys, for example *abattoir* surveys, the use of cattle as sentinel *animals* (which should be individually identifiable), or a combination of methods. *Surveillance* may also be conducted by sampling and testing of bulk milk using an ELISA, as prescribed in the *Terrestrial Manual*.

The objective of serological *surveillance* is to detect evidence of BTV circulation. Samples should be examined for antibodies against BTV using tests prescribed in the *Terrestrial Manual*. Positive BTV antibody tests results can have four possible causes:

- a) natural *infection* with BTV,
- b) *vaccination* against BTV,
- c) maternal antibodies,
- d) positive results due to the lack of specificity of the test.

It may be possible to use sera collected for other survey purposes for BTV *surveillance*. However, the principles of survey design described in these recommendations and the requirements for a statistically valid survey for the presence of BTV *infection* should not be compromised.

The results of random or targeted serological surveys are important in providing reliable evidence that no BTV *infection* is present in a country or *zone*. It is, therefore, essential that the survey is thoroughly documented. It is critical to interpret the results in light of the movement history of the *animals* being sampled.

Serological *surveillance* in a free *zone* should target those areas that are at highest risk of BTV transmission, based on the results of previous *surveillance* and other information. This will usually be towards the boundaries of the free *zone*. In view of the epidemiology of BTV *infection*, either random or targeted sampling is suitable to select *herds* and/or *animals* for testing.

A *protection zone* within a free country or *zone* should separate it from a potentially infected country or *infected zone*. Serological *surveillance* in a free country or *zone* should be carried out over an appropriate distance from the border with a potentially infected country or *infected zone*, based upon geography, climate, history of *infection* and other relevant factors.

Serological *surveillance* in *infected zones* will identify changes in the boundary of the zone, and can also be used to identify the BTV types circulating. In view of the epidemiology of BTV *infection*, either random or targeted sampling is suitable.

3. Virological surveillance

Isolation and genetic analysis of BTV from a proportion of infected *animals* is beneficial in terms of providing information on serotype and genetic characteristics of the viruses concerned.

Virological *surveillance* using tests described in the *Terrestrial Manual* can be conducted:

- a) to identify virus circulation in at risk populations,
- b) to confirm clinically suspect *cases*,
- c) to follow up positive serological results,
- d) to better characterize the genotype of circulating virus in a country or *zone*.

4. Sentinel animals

Sentinel *animals* are a form of targeted *surveillance* with a prospective study design. They are the preferred strategy for BTV *surveillance*. They comprise groups of unexposed *animals* managed at fixed locations and sampled regularly to detect new BTV *infections*.

The primary purpose of a sentinel animal programme is to detect BTV *infections* occurring at a particular place, for instance sentinel groups may be located on the usual boundaries of *infected zones* to detect changes in distribution of BTV. In addition, sentinel animal programmes allow the timing and dynamics of *infections* to be observed.

A sentinel animal programme should use *animals* of known source and history of exposure, control management variables such as use of insecticides and animal housing (depending on the epidemiology of BTV in the area under consideration), and be flexible in its design in terms of sampling frequency and choice of tests.

Care is necessary in choosing the sites for the sentinel groups. The aim is to maximise the chance of detecting BTV activity at the geographical location for which the sentinel site acts as a sampling point. The effect of secondary factors that may influence events at each location, such as climate, may also be analysed. To avoid bias, sentinel groups should comprise *animals* selected to be of similar age and susceptibility to BTV *infection*. Cattle are the most appropriate sentinels but other domestic ruminant species may be used. The only feature distinguishing groups of sentinels should be their geographical location.

Sera from sentinel animal programmes should be stored methodically in a serum bank to allow retrospective studies to be conducted in the event of new serotypes being isolated.

The frequency of sampling will depend on the reason for choosing the sampling site. In endemic areas, virus isolation will allow monitoring of the serotypes and genotypes of BTV circulating during each time period. The borders between infected and non infected areas can be defined by serological detection of *infective period*. Monthly sampling intervals are frequently used. Sentinels in declared free *zones* add to confidence that BTV *infections* are not occurring unobserved. In such cases, sampling prior to and after the possible period of transmission is sufficient.

Definitive information on BTVs circulating in a country or *zone* is provided by isolation and identification of the viruses. If virus isolation is required, sentinels should be sampled at sufficiently frequent intervals to ensure that samples are collected during the period of viraemia.

5. Vector surveillance

BTV is transmitted between ruminant hosts by species of *Culicoides* which vary across the world. It is therefore important to be able to identify potential *vector* species accurately although many such species are closely related and difficult to differentiate with certainty.

The main purpose of *vector surveillance* is to determine areas of different levels of risk and local details of seasonality by determining the various *vector* species present in an area, their respective seasonal

occurrence, and abundance. *Vector surveillance* has particular relevance to potential areas of spread. Long term *surveillance* can also be used to assess *vector* suppression measures.

The most effective way of gathering this information should take account of the biology and behavioural characteristics of the local *vector* species of *Culicoides* and may include the use of Onderstepoort-type light traps or similar, operated from dusk to dawn in locations adjacent to domestic ruminants, or the use of drop traps over ruminant *animals*.

Vector surveillance should be based on scientific sampling techniques. The choice of the number and type of traps to be used in *vector surveillance* and the frequency of their use should take into account the size and ecological characteristics of the area to be surveyed.

The operation of *vector surveillance* sites at the same locations as sentinel *animals* is advisable.

The use of a *vector surveillance* system to detect the presence of circulating virus is not recommended as a routine procedure as the typically low *vector infection* rates mean that such detections can be rare. Other *surveillance* strategies (e.g. the use of sentinel *animals* of domestic ruminants) are preferred to detect virus circulation.

Article 8.3.20.

Documentation of BTV infection free status

1. Members declaring freedom from BTV infection for the country or zone: additional surveillance procedures

In addition to the general conditions described in the above-mentioned articles, a Member declaring freedom from BTV *infection* for the entire 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 should be planned and implemented according to general conditions and methods described in this chapter, to demonstrate absence of BTV *infection* during the preceding 24 months in susceptible domestic ruminant populations. This requires the support of a *laboratory* able to undertake identification of BTV *infection* through virus detection and antibody tests described in the *Terrestrial Manual*. This *surveillance* should be targeted to non-vaccinated *animals*. Clinical *surveillance* may be effective in sheep while serological *surveillance* is more appropriate in cattle.

2. Additional requirements for countries or zones that practise vaccination

Vaccination to prevent the transmission of BTV may be part of a disease control programme. The level of *flock* or *herd* immunity required to prevent transmission will depend on the *flock* or *herd* size, composition (e.g. species) and density of the susceptible population. It is therefore impossible to be prescriptive. The vaccine should also comply with the provisions stipulated for BTV vaccines in the *Terrestrial Manual*. Based on the epidemiology of BTV *infection* in the country or *zone*, it may be that a decision is reached to vaccinate only certain species or other subpopulations.

In countries or *zones* that practise *vaccination*, there is a need to perform virological and serological tests to ensure the absence of virus circulation. These tests should be performed on non-vaccinated subpopulations or on sentinels. The tests have to be repeated at appropriate intervals according to the purpose of the *surveillance* programme. For example, longer intervals may be adequate to confirm endemicity, while shorter intervals may allow on-going demonstration of absence of transmission.

Article 8.3.21.

The use and interpretation of serological and virus detection tests

1. Serological testing

Ruminants infected with BTV produce antibodies to structural and non-structural viral proteins, as do *animals* vaccinated with current modified live virus vaccines. Antibodies to the BTV serogroup antigen are detected with high sensitivity and specificity by competitive ELISA (c-ELISA) and to a lesser extent by AGID as described in the *Terrestrial Manual*. Positive c-ELISA results can be confirmed by neutralization assay to

identify the infecting serotype(s); however, BTV infected ruminants can produce neutralizing antibodies to serotypes of BTV other than those to which they were exposed (false positive results), especially if they have been infected with multiple serotypes.

2. Virus detection

The presence of BTV in ruminant blood and tissues can be detected by virus isolation or polymerase chain reaction (PCR) as described in the *Terrestrial Manual*.

Interpretation of positive and negative results (both true and false) differs markedly between these tests because they detect different aspects of BTV *infection*, specifically (1) infectious BTV (virus isolation) and (2) nucleic acid (PCR). The following are especially relevant to interpretation of PCR assays:

- a) The nested PCR assay detects BTV nucleic acid in ruminants long after the clearance of infectious virus. Thus positive PCR results do not necessarily coincide with active *infection* of ruminants. Furthermore, the nested PCR assay is especially prone to template contamination, thus there is considerable risk of false positive results.
- b) PCR procedures other than real time PCR allow sequence analysis of viral amplicons from ruminant tissues, insect *vectors* or virus isolates. These sequence data are useful for creating data bases to facilitate important epidemiological studies, including the possible distinction of field and vaccine virus strains of BTV, genotype characterization of field strains of BTV, and potential genetic divergence of BTV relevant to vaccine and diagnostic testing strategies.

It is essential that BTV isolates are sent regularly to the OIE Reference Laboratories for genetic and antigenic characterization.

Fig. 1. Application of laboratory tests in serological surveillance

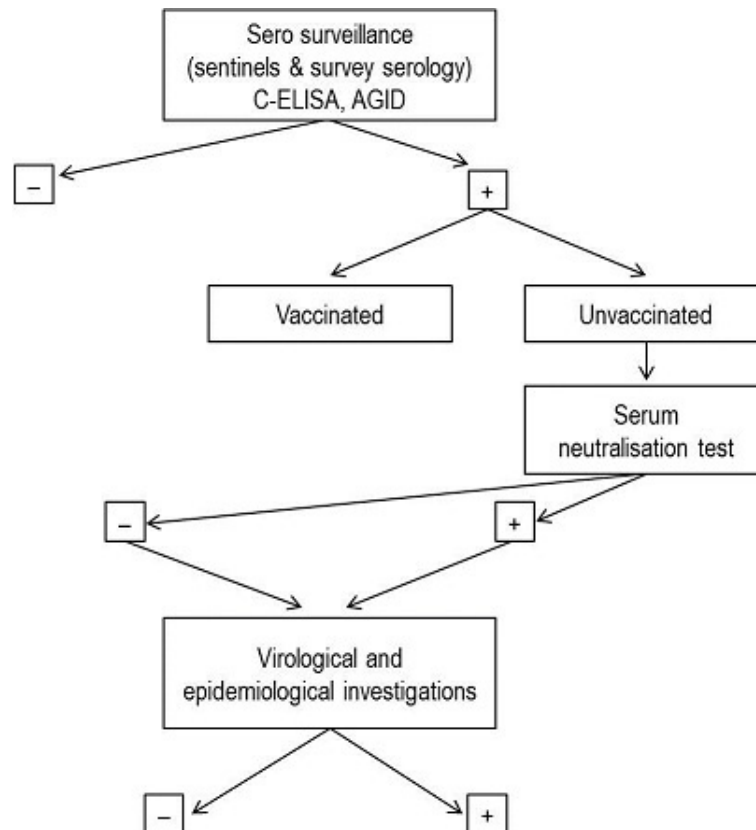
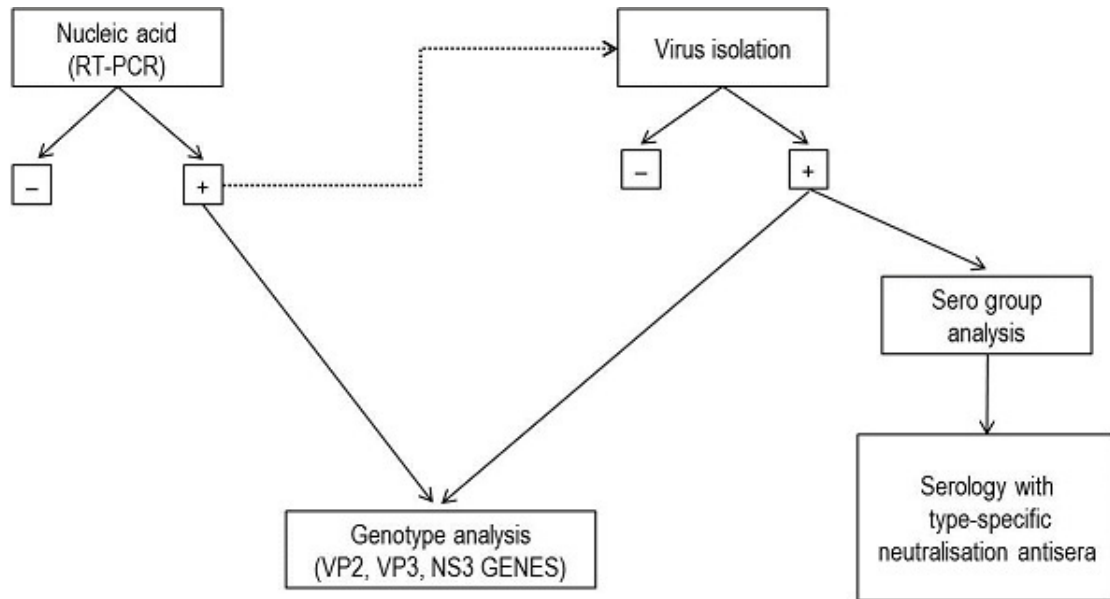


Fig. 2. Application of laboratory tests in virological surveillance

CHAPTER 8.4.
ECHINOCOCCOSIS/HYDATIDOSIS

Article 8.4.1.

General provisions

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

Article 8.4.2.

Recommendations for the importation of dogs, cats and other domestic or wild carnivores

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the *animals* were treated against echinococcosis/hydatidosis prior to shipment, and that the treatment used is recognised as being effective.

CHAPTER 8.5 .

FOOT AND MOUTH DISEASE

Article 8.5.1.

Introduction

For the purposes of the *Terrestrial Code*, the *incubation period* for foot and mouth disease (FMD) shall be 14 days.

For the purposes of this chapter, ruminants include *animals* of the family of Camelidae (except *Camelus dromedarius*).

For the purposes of this chapter, a *case* is an *animal* infected with FMD virus (FMDV).

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

The following defines the occurrence of FMDV *infection*:

- 1) FMDV has been isolated and identified as such from an *animal* or a product derived from that *animal*; or
- 2) viral antigen or viral ribonucleic acid (RNA) specific to one or more of the serotypes of FMDV has been identified in samples from one or more *animals*, whether showing clinical signs consistent with FMD or not, or epidemiologically linked to a confirmed or suspected *outbreak* of FMD, or giving cause for suspicion of previous association or contact with FMDV; or
- 3) antibodies to structural or nonstructural proteins of FMDV that are not a consequence of *vaccination*, have been identified in one or more *animals* showing clinical signs consistent with FMD, or epidemiologically linked to a confirmed or suspected *outbreak* of FMD, or giving cause for suspicion of previous association or contact with FMDV.

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

Article 8.5.2.

FMD free country where vaccination is not practised

Susceptible *animals* in the FMD free country where *vaccination* is not practised should be protected from neighbouring infected countries by the application of animal health measures that effectively prevent the entry of the virus, taking into consideration physical or geographical barriers. These measures may include a *protection zone*.

To qualify for inclusion in the existing list of FMD free countries where *vaccination* is not practised, 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 FMD during the past 12 months;
 - b) no evidence of FMDV *infection* has been found during the past 12 months;
 - c) no *vaccination* against FMD has been carried out during the past 12 months;
 - d) no vaccinated *animal* has been introduced since the cessation of *vaccination*;

- 3) supply documented evidence that:
 - a) *surveillance* for FMD and FMDV *infection* in accordance with Articles 8.5.42. to 8.5.47. and Article 8.5.49. is in operation;
 - b) regulatory measures for the early detection, prevention and control of FMD have been implemented;
- 4) describe in detail the boundaries and measures of a *protection zone*, if applicable.

The Member 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, 3 and 4 above be re-submitted annually and changes in the epidemiological situation or other significant events including those relevant to points 3b) and 4 should be reported to the OIE according to the requirements in Chapter 1.1.

Article 8.5.3.

FMD free country where vaccination is practised

Susceptible *animals* in the FMD free country where *vaccination* is practised should be protected from neighbouring infected countries by the application of animal health measures that effectively prevent the entry of the virus, taking into consideration physical or geographical barriers. These measures may include a *protection zone*.

To qualify for inclusion in the list of FMD free countries where *vaccination* is practised, 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 FMD during the past two years;
 - b) no evidence of FMDV circulation has been found during the past 12 months;
- 3) supply documented evidence that:
 - a) *surveillance* for FMD and FMDV circulation in accordance with Articles 8.5.42. to 8.5.47. and Article 8.5.49. is in operation;
 - b) regulatory measures for the early detection, prevention and control of FMD have been implemented;
 - c) routine *vaccination* is carried out for the purpose of the prevention of FMD;
 - d) the vaccine used complies with the standards described in the *Terrestrial Manual*;
- 4) describe in detail the boundaries and measures of a *protection zone*, if applicable.

The Member 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, 3 and 4 above be re-submitted annually and changes in the epidemiological situation or other significant events including those relevant to points 3b) and 4 should be reported to the OIE according to the requirements in Chapter 1.1.

If a Member that meets the requirements of a FMD free country where *vaccination* is practised wishes to change its status to FMD free country where *vaccination* is not practised, the status of this country remains unchanged for a period of at least 12 months after *vaccination* has ceased. Evidence should also be provided showing that FMDV *infection* has not occurred during that period.

Article 8.5.4.

FMD free zone where vaccination is not practised

An FMD free *zone* where *vaccination* is not practised can be established in either an FMD free country where *vaccination* is practised or in a country of which parts are infected. In defining such *zones* the principles of Chapter 4.3. should be followed. Susceptible *animals* in the FMD free *zone* should be protected from the rest of

the country and from neighbouring countries if they are of a different *animal health status* by the application of animal health measures that effectively prevent the entry of the virus, taking into consideration physical or geographical barriers. These measures may include a *protection zone*.

To qualify for inclusion in the list of FMD free *zones* where *vaccination* is not practised, a Member should:

- 1) have a record of regular and prompt animal *disease* reporting;
- 2) send a declaration to the OIE stating that within the proposed FMD free *zone*:
 - a) there has been no *outbreak* of FMD during the past 12 months;
 - b) no evidence of FMDV *infection* has been found during the past 12 months;
 - c) no *vaccination* against FMD has been carried out during the past 12 months;
 - d) no vaccinated *animal* has been introduced into the *zone* since the cessation of *vaccination*, except in accordance with Article 8.5.10.;
- 3) supply documented evidence that:
 - a) *surveillance* for FMD and FMDV *infection* in accordance with Articles 8.5.42. to 8.5.47. and Article 8.5.49. is in operation;
 - b) regulatory measures for the early detection, prevention and control of FMD have been implemented;
- 4) describe in detail and supply documented evidence that these are properly implemented and supervised:
 - a) the boundaries of the proposed FMD free *zone*;
 - b) the boundaries and measures of a *protection zone*, if applicable;
 - c) the system for preventing the entry of the virus (including the control of the movement of susceptible *animals*) into the proposed FMD free *zone* (in particular if the procedure described in Article 8.5.10. is implemented).

The proposed free *zone* will be included in the list of FMD free *zones* where *vaccination* is not practised only after the submitted evidence has been accepted by the OIE.

The information required in points 2, 3 and 4b)-c) above should be re-submitted annually and changes in the epidemiological situation or other significant events including those relevant to points 3b) and 4 should be reported to the OIE according to the requirements in Chapter 1.1.

Article 8.5.5.

FMD free zone where vaccination is practised

An FMD free *zone* where *vaccination* is practised can be established in either an FMD free country where *vaccination* is not practised or in a country of which parts are infected. In defining such *zones* the principles of Chapter 4.3. should be followed. Susceptible *animals* in the FMD free *zone* where *vaccination* is practised should be protected from neighbouring countries or *zones* if they are of a lesser *animal health status* by the application of animal health measures that effectively prevent the entry of the virus, taking into consideration physical or geographical barriers. These measures may include a *protection zone*.

To qualify for inclusion in the list of FMD free *zones* where *vaccination* is practised, a Member should:

- 1) have a record of regular and prompt animal *disease* reporting;
- 2) send a declaration to the OIE that within the proposed FMD free *zone*:
 - a) there has been no *outbreak* of FMD for the past two years;
 - b) no evidence of FMDV circulation has been found during the past 12 months;

- 3) supply documented evidence that:
 - a) *surveillance* for FMD and FMDV *infection/circulation* in accordance with Articles 8.5.42. to 8.5.47. and Article 8.5.49. is in operation;
 - b) regulatory measures for the early detection, prevention and control of FMD have been implemented;
 - c) routine *vaccination* is carried out for the purpose of the prevention of FMD;
 - d) the vaccine used complies with the standards described in the *Terrestrial Manual*;
- 4) describe in detail and supply documented evidence that these are properly implemented and supervised:
 - a) the boundaries of the proposed FMD free *zone*;
 - b) the boundaries and measures of a *protection zone*, if applicable;
 - c) the system for preventing the entry of the virus (including the control of the movement of susceptible *animals*) into the proposed FMD free *zone* (in particular if the procedure described in Article 8.5.10. is implemented).

The proposed free *zone* will be included in the list of FMD free *zones* where *vaccination* is practised only after the submitted evidence has been accepted by the OIE. The information required in points 2, 3 and 4 b)-c) above should be re-submitted annually and changes in the epidemiological situation or other significant events including those relevant to points 3 b) and 4 should be reported to the OIE according to the requirements in Chapter 1.1.

If a Member that has a *zone* which meets the requirements of a FMD free *zone* where *vaccination* is practised wishes to change the status of the *zone* to FMD free *zone* where *vaccination* is not practised, the status of this *zone* remains unchanged for a period of at least 12 months after *vaccination* has ceased. Evidence should also be provided showing that FMDV *infection* has not occurred in the said *zone* during that period.

Article 8.5.6.

FMD free compartment

A FMD free *compartment* can be established in either a FMD free country or *zone* or in an infected country or *zone*. In defining such a *compartment* the principles of Chapters 4.3. and 4.4. should be followed. Susceptible *animals* in the FMD free *compartment* should be separated from any other susceptible *animals* by the application of an effective biosecurity management system.

A Member wishing to establish a FMD free *compartment* should:

- 1) have a record of regular and prompt animal *disease* reporting and if not FMD free, have an official control programme and a *surveillance* system for FMD in place according to Articles 8.5.42. to 8.5.47. and Article 8.5.49. that allows an accurate knowledge of the prevalence of FMD in the country or *zone*;
- 2) declare for the FMD free *compartment* that:
 - a) there has been no *outbreak* of FMD during the past 12 months;
 - b) no evidence of FMDV *infection* has been found during the past 12 months;
 - c) *vaccination* against FMD is prohibited;
 - d) no *animal* vaccinated against FMD within the past 12 months is in the *compartment*;
 - e) *animals*, semen and embryos should only enter the *compartment* in accordance with relevant articles in this chapter;
 - f) documented evidence shows that *surveillance* in accordance with Articles 8.5.42. to 8.5.47. and Article 8.5.49. is in operation for FMD and FMDV *infection*;
 - g) an *animal identification* and *traceability* system in accordance with Chapters 4.1. and 4.2. is in place;

- 3) describe in detail the animal subpopulation in the *compartment* and the biosecurity plan for FMD and FMDV *infection*.

The *compartment* should be approved by the *Veterinary Authority*. The first approval should only be granted when no *outbreak* of FMD has occurred within the *zone* in which the *compartment* is situated, during the last three months.

Article 8.5.7.

FMD infected country or zone

For the purposes of this chapter, an FMD infected country is a country that does not fulfil the requirements to qualify as either an FMD free country where *vaccination* is not practised or an FMD free country where *vaccination* is practised.

For the purposes of this chapter, an FMD *infected zone* is a *zone* that does not fulfil the requirements to qualify as either an FMD free *zone* where *vaccination* is not practised or an FMD free *zone* where *vaccination* is practised.

Article 8.5.8.

Establishment of a containment zone within an FMD free country or zone

In the event of limited *outbreaks* within an FMD free country or *zone*, including within a *protection zone*, with or without *vaccination*, a single *containment zone*, which includes all *cases*, can be established for the purpose of minimizing the impact on the entire country or *zone*.

For this to be achieved and for the Member 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* within a minimum of two *incubation periods* as defined in Article 8.5.1. 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* should be clearly identifiable as belonging to the *containment zone*;
- 4) increased passive and targeted *surveillance* in accordance with Articles 8.5.42. to 8.5.47. and Article 8.5.49. in the rest of the country or *zone* has been carried out and has not detected any evidence of *infection*;
- 5) animal health measures that effectively prevent the spread of the FMDV to the rest of the country or *zone*, taking into consideration physical and geographical barriers, are in place;
- 6) ongoing *surveillance* in the *containment zone* is in place.

The free status of the areas outside the *containment zone* would be suspended pending the establishment of the *containment zone*. The free status of these areas could be reinstated irrespective of the provisions of Article 8.5.9.,

once the *containment zone* is clearly established, by complying with points 1 to 6 above. The *containment zone* should be managed in such a way that it can be demonstrated that *commodities* for *international trade* can be shown to have originated outside the *containment zone*.

The recovery of the FMD free status of the *containment zone* should follow the provisions of Article 8.5.9.

Article 8.5.9.

Recovery of free status

- 1) When an FMD *outbreak* or FMDV *infection* occurs in an FMD free country or *zone* where *vaccination* is not practised, one of the following waiting periods is required to regain the status of FMD free country or *zone* where *vaccination* is not practised:
 - a) three months after the last *case* where a *stamping-out policy* and serological *surveillance* are applied in accordance with Articles 8.5.42. to 8.5.49.; or
 - b) three months after the *slaughter* of all vaccinated *animals* where a *stamping-out policy*, emergency *vaccination* and serological *surveillance* are applied in accordance with Articles 8.5.42. to 8.5.47. and Article 8.5.49.; or
 - c) six months after the last *case* or the last *vaccination* (according to the event that occurs the latest), where a *stamping-out policy*, emergency *vaccination* not followed by the slaughtering of all vaccinated *animals*, and serological *surveillance* are applied in accordance with Articles 8.5.42. to 8.5.47. and Article 8.5.49., provided that a serological survey based on the detection of antibodies to nonstructural proteins of FMDV demonstrates the absence of *infection* in the remaining vaccinated population.

Where a *stamping-out policy* is not practised, the above waiting periods do not apply, and Article 8.5.2. or 8.5.4. applies.

- 2) When an FMD *outbreak* or FMDV *infection* occurs in an FMD free country or *zone* where *vaccination* is practised, one of the following waiting periods is required to regain the status of FMD free country or *zone* where *vaccination* is practised:
 - a) 6 months after the last *case* where a *stamping-out policy*, emergency *vaccination* and serological *surveillance* in accordance with Articles 8.5.42. to 8.5.47. and Article 8.5.49. are applied, provided that the serological *surveillance* based on the detection of antibodies to nonstructural proteins of FMDV demonstrates the absence of virus circulation; or
 - b) 18 months after the last *case* where a *stamping-out policy* is not applied, but emergency *vaccination* and serological *surveillance* in accordance with Articles 8.5.42. to 8.5.47. and Article 8.5.49. are applied, provided that the serological *surveillance* based on the detection of antibodies to nonstructural proteins of FMDV demonstrates the absence of virus circulation.
- 3) When a FMD *outbreak* or FMDV *infection* occurs in a FMD free *compartment*, Article 8.5.6. applies.

Article 8.5.10.

Direct transfer of FMD susceptible animals from an infected zone for slaughter in a free zone (where vaccination either is or is not practised)

In order not to jeopardise the status of a free *zone*, FMD susceptible *animals* should only leave the *infected zone* if transported directly to *slaughter* in the nearest designated *abattoir* under the following conditions:

- 1) no FMD susceptible *animal* has been introduced into the *establishment* of origin and no *animal* in the *establishment* of origin has shown clinical signs of FMD for at least 30 days prior to movement;
- 2) the *animals* were kept in the *establishment* of origin for at least three months prior to movement;
- 3) FMD has not occurred within a ten-kilometre radius of the *establishment* of origin for at least three months prior to movement;

- 4) the *animals* should be transported under the supervision of the *Veterinary Authority* in a *vehicle*, which was cleansed and disinfected before *loading*, directly from the *establishment* of origin to the *abattoir* without coming into contact with other susceptible *animals*;
- 5) such an *abattoir* is not approved for the export of *fresh meat* during the time it is handling the *meat* of *animals* from the *infected zone*;
- 6) *vehicles* and the *abattoir* should be subjected to thorough cleansing and *disinfection* immediately after use.

The *meat* should be treated according to Article 8.5.25. or Article 8.5.26. Other products obtained from the *animals* and any products coming into contact with them should be considered infected, and treated in such a way as to destroy any residual virus in accordance with Articles 8.5.34. to 8.5.41.

Animals moved into a free *zone* for other purposes should be moved under the supervision of the *Veterinary Authority* and comply with the conditions in Article 8.5.14.

Article 8.5.11.

Transfer directly to slaughter of FMD susceptible animals from a containment zone to a free zone (where vaccination either is or is not practised) within a country

In order not to jeopardise the status of a free *zone*, FMD susceptible *animals* should only leave the *containment zone* if moved by mechanised transport directly to *slaughter* in the nearest designated *abattoir* under the following conditions:

- 1) the *containment zone* has been officially established according to the requirements in Article 8.5.8.;
- 2) the *animals* should be transported under the supervision of the *Veterinary Authority* in a *vehicle*, which was cleansed and disinfected before *loading*, directly from the *establishment* of origin to the *abattoir* without coming into contact with other susceptible *animals*;
- 3) such an *abattoir* is not approved for the export of *fresh meat* during the time it is handling the *meat* of *animals* from the *containment zone*;
- 4) *vehicles* and the *abattoir* should be subjected to thorough cleansing and *disinfection* immediately after use.

The *meat* should be treated according to point 2 of Article 8.5.25. or Article 8.5.26. Other products obtained from the *animals* and any products coming into contact with them should be treated in such a way as to destroy any residual virus in accordance with Articles 8.5.34. to 8.5.41.

Article 8.5.12.

Recommendations for importation from FMD free countries or zones where vaccination is not practised or FMD free compartments

For FMD susceptible animals

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

- 1) showed no clinical sign of FMD on the day of shipment;
- 2) were kept since birth or for at least the past three months in a FMD free country or *zone* where *vaccination* is not practised or a FMD free *compartment*;
- 3) have not been vaccinated;
- 4) if transiting an *infected zone*, were not exposed to any source of FMD *infection* during transportation to the *place of shipment*.

Article 8.5.13.

Recommendations for importation from FMD free countries or zones where vaccination is practised

For domestic ruminants and pigs

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

- 1) showed no clinical sign of FMD on the day of shipment;
- 2) were kept in an FMD free country or *zone* since birth or for at least the past three months; and
- 3) have not been vaccinated and were subjected, with negative results, to tests for antibodies against FMD virus, when destined to an FMD free country or *zone* where *vaccination* is not practised;
- 4) if transiting an *infected zone*, were not exposed to any source of FMD *infection* during transportation to the *place of shipment*.

Article 8.5.14.

Recommendations for importation from FMD infected countries or zones

For domestic ruminants and pigs

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

- 1) showed no clinical sign of FMD on the day of shipment;
- 2) were kept in the *establishment* of origin since birth, or
 - a) for the past 30 days, if a *stamping-out policy* is in force in the *exporting country*, or
 - b) for the past 3 months, if a *stamping-out policy* is not in force in the *exporting country*,and that FMD has not occurred within a ten-kilometre radius of the *establishment* of origin for the relevant period as defined in points a) and b) above; and
- 3) were isolated in an *establishment* for the 30 days prior to shipment, and all *animals* in isolation were subjected to diagnostic tests (probang and serology) for evidence of FMDV *infection* with negative results at the end of that period, and that FMD did not occur within a ten-kilometre radius of the *establishment* during that period; or
- 4) were kept in a *quarantine station* for the 30 days prior to shipment, all *animals* in quarantine were subjected to diagnostic tests (probang and serology) for evidence of FMDV *infection* with negative results at the end of that period, and that FMD did not occur within a ten-kilometre radius of the *quarantine station* during that period;
- 5) were not exposed to any source of FMD *infection* during their transportation from the *quarantine station* to the *place of shipment*.

Article 8.5.15.

Recommendations for importation from FMD free countries or zones where vaccination is not practised or FMD free compartments

For fresh semen of domestic ruminants and pigs

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

- 1) the donor *animals*:
 - a) showed no clinical sign of FMD on the day of collection of the semen;

- b) were kept for at least three months prior to collection in a FMD free country or *zone* where *vaccination* is not practised or a FMD free *compartment*;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 8.5.16.

Recommendations for importation from FMD free countries or zones where vaccination is not practised or FMD free compartments

For frozen semen of domestic ruminants and pigs

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

- 1) the donor *animals*:
 - a) showed no clinical sign of FMD on the day of collection of the semen and for the following 30 days;
 - b) were kept for at least three months prior to collection in an FMD free country or *zone* where *vaccination* is not practised or a FMD free *compartment*;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 8.5.17.

Recommendations for importation from FMD free countries or zones where vaccination is practised

For semen of domestic ruminants and pigs

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

- 1) the donor *animals*:
 - a) showed no clinical sign of FMD on the day of collection of the semen and for the following 30 days;
 - b) were kept for at least three months prior to collection in a FMD free country or *zone*;
 - c) if destined to an FMD free country or *zone* where *vaccination* is not practised:
 - i) have not been vaccinated and were subjected, not less than 21 days after collection of the semen, to tests for antibodies against FMD virus, with negative results; or
 - ii) had been vaccinated at least twice, with the last *vaccination* not more than 12 and not less than one month prior to collection;
- 2) no other *animal* present in the *artificial insemination centre* has been vaccinated within the month prior to collection;
- 3) the semen:
 - a) was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.;
 - b) was stored in the country of origin for a period of at least one month following collection, and during this period no *animal* on the *establishment* where the donor *animals* were kept showed any sign of FMD.

Article 8.5.18.

Recommendations for importation from FMD infected countries or zones

For semen of domestic ruminants and pigs

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

- 1) the donor *animals*:
 - a) showed no clinical sign of FMD on the day of collection of the semen;
 - b) were kept in an *establishment* where no *animal* had been added in the 30 days before collection, and that FMD has not occurred within 10 kilometres for the 30 days before and after collection;
 - c) have not been vaccinated and were subjected, not less than 21 days after collection of the semen, to tests for antibodies against FMD virus, with negative results; or
 - d) had been vaccinated at least twice, with the last *vaccination* not more than 12 and not less than one month prior to collection;
- 2) no other *animal* present in the *artificial insemination centre* has been vaccinated within the month prior to collection;
- 3) the semen:
 - a) was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.;
 - b) was subjected, with negative results, to a test for FMDV *infection* if the donor *animal* has been vaccinated within the 12 months prior to collection;
 - c) was stored in the country of origin for a period of at least one month following collection, and that during this period no *animal* on the *establishment* where the donor *animals* were kept showed any sign of FMD.

Article 8.5.19.

Recommendations for the importation of *in vivo* derived embryos of cattle

Irrespective of the FMD status of the *exporting country, zone or compartment*, *Veterinary Authorities* should authorise without restriction on account of FMD the import or transit through their territory of *in vivo* derived embryos of cattle subject to the presentation of an *international veterinary certificate* attesting that the embryos were collected, processed and stored in conformity with the provisions of Chapters 4.8. and 4.9., as relevant.

Article 8.5.20.

Recommendations for importation from FMD free countries or zones where vaccination is not practised or FMD free compartments

For *in vitro* produced embryos of cattle

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

- 1) the donor females:
 - a) showed no clinical sign of FMD at the time of collection of the oocytes;
 - b) were kept at the time of collection in a FMD free country or *zone* where *vaccination* is not practised or a FMD free *compartment*;
- 2) fertilisation was achieved with semen meeting the conditions referred to in Articles 8.5.15., 8.5.16., 8.5.17. or 8.5.18., as relevant;

- 3) the oocytes were collected, and the embryos were processed and stored in conformity with the provisions of Chapters 4.8. and 4.9., as relevant.

Article 8.5.21.

Recommendations for importation from FMD free countries or zones where vaccination is practisedFor *in vitro* produced embryos of cattle

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

- 1) the donor females:
 - a) showed no clinical sign of FMD at the time of collection of the oocytes;
 - b) were kept for at least three months prior to collection in a FMD free country or zone where *vaccination* is practised;
 - c) if destined for an FMD free country or zone where *vaccination* is not practised or a FMD free compartment:
 - i) have not been vaccinated and were subjected, with negative results, to tests for antibodies against FMD virus; or
 - ii) had been vaccinated at least twice, with the last *vaccination* not less than one month and not more than 12 months prior to collection;
- 2) no other *animal* present in the *establishment* has been vaccinated within the month prior to collection;
- 3) fertilization was achieved with semen meeting the conditions referred to in Articles 8.5.15., 8.5.16., 8.5.17. or 8.5.18., as relevant;
- 4) the oocytes were collected, and the embryos were processed and stored in conformity with the provisions of Chapters 4.8. and 4.9., as relevant.

Article 8.5.22.

Recommendations for importation from FMD free countries or zones where vaccination is not practised or FMD free compartmentsFor fresh meat or meat products of FMD susceptible animals

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

- 1) have been kept in the FMD free country or zone where *vaccination* is not practised or a FMD free compartment, or which have been imported in accordance with Article 8.5.12., Article 8.5.13. or Article 8.5.14.;
- 2) have been slaughtered in an approved *abattoir* and have been subjected to ante- and post-mortem inspections for FMD with favourable results.

Article 8.5.23.

Recommendations for importation from FMD free countries or zones where vaccination is practised

For fresh meat of cattle and buffaloes (*Bubalus bubalis*) (excluding feet, head and viscera)

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

- 1) have been kept in the FMD free country or *zone* where *vaccination* is practised, or which have been imported in accordance with Article 8.5.12., Article 8.5.13. or Article 8.5.14.;
- 2) have been slaughtered in an approved *abattoir* and have been subjected to ante- and post-mortem inspections for FMD with favourable results.

Article 8.5.24.

Recommendations for importation from FMD free countries or zones where vaccination is practised

For fresh meat or meat products of pigs and ruminants other than cattle and buffaloes

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

- 1) have been kept in the FMD free country or *zone* where *vaccination* is practised, or which have been imported in accordance with Article 8.5.12., Article 8.5.13. or Article 8.5.14.;
- 2) have been slaughtered in an approved *abattoir* and have been subjected to ante- and post-mortem inspections for FMD with favourable results.

Article 8.5.25.

Recommendations for importation from FMD infected countries or zones, where an official control programme for FMD, involving compulsory systematic vaccination of cattle, exists

For fresh meat of cattle and buffaloes (*Bubalus bubalis*) (excluding feet, head and viscera)

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

- 1) comes from *animals* which:
 - a) have remained in the *exporting country* for at least three months prior to *slaughter*;
 - b) have remained, during this period, in a part of the country where cattle are regularly vaccinated against FMD and where official controls are in operation;
 - c) have been vaccinated at least twice with the last *vaccination* not more than 12 months and not less than one month prior to *slaughter*;
 - d) were kept for the past 30 days in an *establishment*, and that FMD has not occurred within a ten-kilometre radius of the *establishment* during that period;
 - e) have been transported, in a *vehicle* which was cleansed and disinfected before the cattle were loaded, directly from the *establishment* of origin to the approved *abattoir* without coming into contact with other *animals* which do not fulfil the required conditions for export;
 - f) have been slaughtered in an approved *abattoir*.
 - i) which is officially designated for export;
 - ii) in which no FMD has been detected during the period between the last *disinfection* carried out before *slaughter* and the shipment for export has been dispatched;

- g) have been subjected to ante- and post-mortem inspections for FMD with favourable results within 24 hours before and after *slaughter*;
- 2) comes from deboned carcasses:
- a) from which the major lymphatic nodes have been removed;
 - b) which, prior to deboning, have been submitted to maturation at a temperature above + 2°C for a minimum period of 24 hours following *slaughter* and in which the pH value was below 6.0 when tested in the middle of both the longissimus dorsi.

Article 8.5.26.

Recommendations for importation from FMD infected countries or zones

For meat products of domestic ruminants and pigs

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

- 1) the entire consignment of *meat* comes from *animals* which have been slaughtered in an approved *abattoir* and have been subjected to ante- and post-mortem inspections for FMD with favourable results;
- 2) the *meat* has been processed to ensure the destruction of the FMD virus in conformity with one of the procedures referred to in Article 8.5.34.;
- 3) the necessary precautions were taken after processing to avoid contact of the *meat products* with any potential source of FMD virus.

Article 8.5.27.

Recommendations for importation from FMD free countries or zones (where vaccination either is or is not practised) or FMD free compartments

For milk and milk products intended for human consumption and for products of animal origin (from FMD susceptible animals) intended for use in animal feeding or for agricultural or industrial use

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products come from *animals* which have been kept in a FMD free country, *zone* or *compartment*, or which have been imported in accordance with Article 8.5.12., Article 8.5.13. or Article 8.5.14.

Article 8.5.28.

Recommendations for importation from FMD infected countries or zones where an official control programme exists

For milk, cream, milk powder and milk products

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

- 1) these products:
 - a) originate from *herds* or *flocks* which were not infected or suspected of being infected with FMD at the time of *milk* collection;
 - b) have been processed to ensure the destruction of the FMD virus in conformity with one of the procedures referred to in Article 8.5.38. and in Article 8.5.39.;
- 2) the necessary precautions were taken after processing to avoid contact of the products with any potential source of FMD virus.

Article 8.5.29.

Recommendations for importation from FMD infected countries

For blood and meat-meals (from domestic or wild ruminants and pigs)

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the manufacturing method for these products included heating to a minimum core temperature of 70°C for at least 30 minutes.

Article 8.5.30.

Recommendations for importation from FMD infected countries

For wool, hair, bristles, raw hides and skins (from domestic or wild ruminants and pigs)

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

- 1) these products have been processed to ensure the destruction of the FMD virus in conformity with one of the procedures referred to in Articles 8.5.35., 8.5.36. and 8.5.37.;
- 2) the necessary precautions were taken after collection or processing to avoid contact of the products with any potential source of FMD virus.

Veterinary Authorities can authorise, without restriction, the 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), provided that these products have been submitted to the usual chemical and mechanical processes in use in the tanning industry.

Article 8.5.31.

Recommendations for importation from FMD infected countries or zones

For straw and forage

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

- 1) are free of grossly identifiable contamination with material of animal origin;
- 2) have been subjected to one of the following treatments, which, in the case of material sent in bales, has been shown to penetrate to the centre of the bale:
 - a) either to the action of steam in a closed chamber such that the centre of the bales has reached a minimum temperature of 80°C for at least ten minutes,
 - b) or to the action of formalin fumes (formaldehyde gas) produced by its commercial solution at 35–40 percent in a chamber kept closed for at least eight hours and at a minimum temperature of 19°C;

OR

- 3) have been kept in bond for at least three months (under study) before being released for export.

Article 8.5.32.

Recommendations for importation from FMD free countries or zones (where vaccination either is or is not practised)For skins and trophies derived from FMD susceptible wild animals

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products are derived from *animals* that have been killed in such a country or *zone*, or which have been imported from a country or *zone* free of FMD (where *vaccination* either is or is not practised).

Article 8.5.33.

Recommendations for importation from FMD infected countries or zonesFor skins and trophies derived from FMD susceptible wild animals

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products have been processed to ensure the destruction of the FMD virus in conformity with the procedures referred to in Article 8.5.40.

Article 8.5.34.

Procedures for the inactivation of the FMD virus in meat

For the inactivation of viruses present in *meat*, one of the following procedures should be used:

1. Canning

Meat is subjected to heat treatment in a hermetically sealed container to reach an internal core temperature of at least 70°C for a minimum of 30 minutes or to any equivalent treatment which has been demonstrated to inactivate the FMD virus.

2. Thorough cooking

Meat, previously deboned and defatted, shall be subjected to heating so that an internal temperature of 70°C or greater is maintained for a minimum of 30 minutes.

After cooking, it shall be packed and handled in such a way that it cannot be exposed to a source of virus.

3. Drying after salting

When *rigor mortis* is complete, the *meat* must be deboned, salted with cooking salt (NaCl) and completely dried. It must not deteriorate at ambient temperature.

'Drying' is defined in terms of the ratio between water and protein which must not be greater than 2.25:1.

Article 8.5.35.

Procedures for the inactivation of the FMD virus in wool and hair

For the inactivation of viruses present in wool and hair for industrial use, one of the following procedures should be used:

- 1) 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);
- 2) chemical depilation by means of slaked lime or sodium sulphide;
- 3) fumigation in formaldehyde in a hermetically sealed chamber for at least 24 hours. The most practical method is to place potassium permanganate in containers (which must NOT be made of plastic or polyethylene) and

add commercial formalin; the amounts of formalin and potassium permanganate are respectively 53 ml and 35 g per cubic metre of the chamber;

- 4) industrial scouring which consists of the immersion of wool in a water-soluble detergent held at 60–70°C;
- 5) storage of wool at 18°C for four weeks, or 4°C for four months, or 37°C for eight days.

Article 8.5.36.

Procedures for the inactivation of the FMD virus in bristles

For the inactivation of viruses present in bristles for industrial use, one of the following procedures should be used:

- 1) boiling for at least one hour;
- 2) immersion for at least 24 hours in a 1 percent solution of formaldehyde prepared from 30 ml commercial formalin per litre of water.

Article 8.5.37.

Procedures for the inactivation of the FMD virus in raw hides and skins

For the inactivation of viruses present in raw hides and skins for industrial use, the following procedure should be used: salting for at least 28 days in sea salt containing 2 percent sodium carbonate.

Article 8.5.38.

Procedures for the inactivation of the FMD virus in milk and cream for human consumption

For the inactivation of viruses present in *milk* and cream for human consumption, one of the following procedures should be used:

- 1) a sterilisation process applying a minimum temperature of 132°C for at least one second (ultra-high temperature [UHT]), or
- 2) if the milk has a pH less than 7.0, a sterilisation process applying a minimum temperature of 72°C for at least 15 seconds (high temperature – short time pasteurisation [HTST]), or
- 3) if the milk has a pH of 7.0 or over, the HTST process applied twice.

Article 8.5.39.

Procedures for the inactivation of the FMD virus in milk for animal consumption

For the inactivation of viruses present in *milk* for animal consumption, one of the following procedures should be used:

- 1) the HTST process applied twice;
- 2) HTST combined with another physical treatment, e.g. maintaining a pH 6 for at least one hour or additional heating to at least 72°C combined with desiccation;
- 3) UHT combined with another physical treatment referred to in point 2 above.

Article 8.5.40.

Procedures for the inactivation of the FMD virus in skins and trophies from wild animals susceptible to the disease

For the inactivation of viruses present in skins and trophies from *wild animals* susceptible to FMD, one of the following procedures should be used prior to complete taxidermal treatment:

- 1) boiling in water for an appropriate time so as to ensure that any matter other than bone, horns, hooves, claws, antlers or teeth is removed;
- 2) gamma irradiation at a dose of at least 20 kiloGray at room temperature (20°C or higher);
- 3) soaking, with agitation, in a 4 percent (w/v) solution of washing soda (sodium carbonate – Na₂CO₃) maintained at pH 11.5 or above for at least 48 hours;
- 4) soaking, with agitation, in a formic acid solution (100 kg salt [NaCl] and 12 kg formic acid per 1,000 litres water) maintained at below pH 3.0 for at least 48 hours; wetting and dressing agents may be added;
- 5) in the case of raw hides, salting for at least 28 days with sea salt containing 2 percent washing soda (sodium carbonate – Na₂CO₃).

Article 8.5.41.

Procedures for the inactivation of the FMD virus in casings of ruminants and pigs

For the inactivation of viruses present in casings of ruminants and pigs, the following procedures should be used: salting for at least 30 days either with dry salt (NaCl) or with saturated brine (*Aw* < 0.80), or with phosphate supplemented dry salt containing 86.5 percent NaCl, 10.7 percent Na₂HPO₄ and 2.8 percent Na₃PO₄ (weight/weight/weight), and kept at a temperature of greater than 12°C during this entire period.

Article 8.5.42.

Surveillance: introduction

Articles 8.5.42. to 8.5.47. and Article 8.5.49. define the principles and provide a guide for the *surveillance* of FMD in accordance with Chapter 1.4. applicable to Members seeking establishment of freedom from FMD, either with or without the use of *vaccination*. Guidance is provided for Members seeking reestablishment of freedom from FMD for the entire country or for a *zone*, either with or without *vaccination*, or a *compartment*, following an *outbreak* and for the maintenance of FMD status.

The impact and epidemiology of FMD 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 FMD at an acceptable level of confidence will need to be adapted to the local situation. For example, the approach to proving freedom from FMD following an *outbreak* caused by a pig-adapted strain of FMD virus (FMDV) should differ significantly from an application designed to prove freedom from FMD for a country or *zone* where African buffaloes (*Syncerus caffer*) provide a potential reservoir of *infection*. It is incumbent upon the Member to submit a dossier to the OIE in support of its application that not only explains the epidemiology of FMD 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 Members to provide a well-reasoned argument to prove that the absence of FMDV *infection* (in non-vaccinated populations) or circulation (in vaccinated populations) is assured at an acceptable level of confidence.

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

For the purposes of this chapter, virus circulation means transmission of FMDV as demonstrated by clinical signs, serological evidence or virus isolation.

Article 8.5.43.

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 FMD to a *laboratory* for FMD diagnoses as described in the *Terrestrial Manual*.
- 2) The FMD *surveillance* programme should:
 - a) include an early warning system throughout the production, marketing and processing chain for reporting suspicious cases. Farmers and workers who have day-to-day contact with livestock, as well as diagnosticians, should report promptly any suspicion of FMD. They should be supported directly or indirectly (e.g. through private *veterinarians* or *veterinary para-professionals*) by government information programmes and the *Veterinary Authority*. All suspect cases of FMD 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 FMD 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 an FMD infected country or *infected zone* (for example, bordering a game park in which infected *wildlife* are present).

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 FMDV. 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 FMDV *infection/circulation* 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 8.5.44.

Surveillance strategies1. Introduction

The target population for *surveillance* aimed at identifying *disease* and *infection* should cover all the susceptible species within the country, *zone* or *compartment*.

The design of *surveillance* programmes to prove the absence of FMDV *infection/circulation* needs to be carefully followed to avoid producing results that are either insufficiently reliable to be accepted by the OIE or international trading partners, or excessively costly and logistically complicated. The design of any *surveillance* programme, therefore, requires inputs from professionals competent and experienced in this field.

The strategy employed may be based on randomised sampling requiring *surveillance* consistent with demonstrating the absence of FMDV *infection/circulation* at an acceptable level of statistical confidence. The frequency of sampling should be dependent on the epidemiological situation. Targeted *surveillance* (e.g. based on the increased likelihood of *infection* in particular localities or species) may be an appropriate strategy. The Member should justify the *surveillance* strategy chosen as adequate to detect the presence of FMDV *infection/circulation* in accordance with Chapter 1.4. and the epidemiological situation. It may, for example, be appropriate to target clinical *surveillance* at particular species likely to exhibit clear clinical signs (e.g. cattle and pigs). If a Member wishes to apply for recognition of a specific *zone* within the country as being free from FMDV *infection/circulation*, the design of the survey and the basis for the sampling process would need to be aimed at the population within the *zone*.

For random surveys, the design of 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/circulation* 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 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 for the *vaccination/infection* history and production class of *animals* in the target population.

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 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/circulation* 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* which may be epidemiologically linked to it.

2. Clinical surveillance

Clinical *surveillance* aims at detecting clinical signs of FMD by close physical examination of susceptible *animals*. Whereas significant emphasis is placed on the diagnostic value of mass serological screening, *surveillance* based on clinical inspection should not be underrated. It may be able to provide a high 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 FMD suspects detected by either of these complementary diagnostic approaches. *Laboratory* testing may 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.

A number of issues must be considered in clinical *surveillance* for FMD. The often underestimated labour intensity and the logistical difficulties involved in conducting clinical examinations should not be underestimated and should be taken into account.

Identification of clinical *cases* is fundamental to FMD *surveillance*. Establishment of the molecular, antigenic and other biological characteristics of the causative virus, as well as its source, is dependent upon disclosure of such *animals*. It is essential that FMDV isolates are sent regularly to the regional reference *laboratory* for genetic and antigenic characterization.

3. Virological surveillance

Virological *surveillance* using tests described in the *Terrestrial Manual* should be conducted:

- a) to monitor at risk populations;
- b) to confirm clinically suspect *cases*;
- c) to follow up positive serological results;
- d) to test 'normal' daily mortality, to ensure early detection of *infection* in the face of *vaccination* or in *establishments* epidemiologically linked to an *outbreak*.

4. Serological surveillance

Serological *surveillance* aims at detecting antibodies against FMDV. Positive FMDV antibody test results can have four possible causes:

- a) natural *infection* with FMDV;
- b) *vaccination* against FMD;

- c) maternal antibodies derived from an immune dam (maternal antibodies in cattle are usually found only up to six months of age but in some individuals and in some species, maternal antibodies can be detected for considerably longer periods);
- d) heterophile (cross) reactions.

It is important that serological tests, where applicable, contain antigens appropriate for detecting antibodies against viral variants (types, subtypes, lineages, topotypes, etc.) that have recently occurred in the region concerned. Where the probable identity of FMDVs is unknown or where exotic viruses are suspected to be present, tests able to detect representatives of all serotypes should be employed (e.g. tests based on nonstructural viral proteins – see below).

It may be possible to use serum collected for other survey purposes for FMD *surveillance*. However, the principles of survey design described in this chapter and the requirement for a statistically valid survey for the presence of FMDV 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. If *vaccination* cannot be excluded as the cause of positive serological reactions, diagnostic methods should be employed that detect the presence of antibodies to nonstructural proteins (NSPs) of FMDVs as described in the *Terrestrial Manual*.

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

Article 8.5.45.

Members applying for recognition of freedom from FMD for the whole country or a zone where vaccination is not practised: additional surveillance procedures

In addition to the general conditions described in the above-mentioned articles, a Member applying for recognition of FMD freedom for the country or a *zone* where *vaccination* is not practised 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 FMDV *infection*, during the preceding 12 months in susceptible populations. This requires the support of a national or other *laboratory* able to undertake identification of FMDV *infection* through virus/antigen/genome detection and antibody tests described in the *Terrestrial Manual*.

Article 8.5.46.

Members applying for recognition of freedom from FMD for the whole country or a zone where vaccination is practised: additional surveillance procedures

In addition to the general conditions described in the above-mentioned articles, a Member applying for recognition of country or *zone* freedom from FMD with *vaccination* should show evidence of an effective *surveillance* programme planned and implemented according to general conditions and methods in this chapter. Absence of clinical *disease* in the country or *zone* for the past two years should be demonstrated. Furthermore, *surveillance* should demonstrate that FMDV has not been circulating in any susceptible population during the past 12 months. This will require serological *surveillance* incorporating tests able to detect antibodies to NSPs as described in the *Terrestrial Manual*. *Vaccination* to prevent the transmission of FMDV may be part of a disease control programme. The level of *herd* immunity required to prevent transmission will depend on the size, composition (e.g. species) and density of the susceptible population. It is therefore impossible to be prescriptive. However, the aim should be for at least 80 percent of the *animals* in each vaccinated population to have protective immunity. The vaccine must comply with the *Terrestrial Manual*. Based on the epidemiology of FMD in the country or *zone*, it may be that a decision is reached to vaccinate only certain species or other subsets of the total susceptible population. In that case, the rationale should be contained within the dossier accompanying the application to the OIE for recognition of status.

Evidence to show the effectiveness of the *vaccination* programme should be provided.

Article 8.5.47.

Members re-applying for recognition of freedom from FMD for the whole country or a zone where vaccination is either practised or not practised, following an outbreak: additional surveillance procedures

In addition to the general conditions described in the above-mentioned articles, a country re-applying for country or *zone* freedom from FMD where *vaccination* is practised or not practised should show evidence of an active *surveillance* programme for FMD as well as absence of FMDV *infection/circulation*. This will require serological *surveillance* incorporating, in the case of a country or a *zone* practising *vaccination*, tests able to detect antibodies to NSPs as described in the *Terrestrial Manual*.

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

- 1) *slaughter* of all clinically affected and in-contact susceptible *animals*;
- 2) *slaughter* of all clinically affected and in-contact susceptible *animals* and *vaccination* of at-risk *animals*, with subsequent *slaughter* of vaccinated *animals*;
- 3) *slaughter* of all clinically affected and in-contact susceptible *animals* and *vaccination* of at-risk *animals*, without subsequent *slaughter* of vaccinated *animals*;
- 4) *vaccination* used without *slaughter* of affected *animals* or subsequent *slaughter* of vaccinated *animals*.

The time periods before which an application can be made for re-instatement of freedom from FMD depends on which of these alternatives is followed. The time periods are prescribed in Article 8.5.9.

In all circumstances, a Member re-applying for country or *zone* freedom from FMD with *vaccination* or without *vaccination* should report the results of an active *surveillance* programme implemented according to general conditions and methods in this chapter.

Article 8.5.48.

OIE endorsed official control programme for FMD

The overall objective of an OIE endorsed *official control programme* for FMD is for countries to progressively improve the situation and eventually attain free status for FMD.

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

For a Member's *official control programme* for FMD to be endorsed by the OIE, the Member should:

- 1) submit documented evidence on the capacity of the *Veterinary Services* to control FMD; this evidence can be provided by countries following the OIE PVS Pathway;
- 2) submit documentation indicating that the *official control programme* for FMD is applicable to the entire territory;
- 3) have a record of regular and prompt animal *disease* reporting according to the requirements in Chapter 1.1.;
- 4) submit a dossier on the epidemiology of FMD 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*;
 - c) the main livestock production systems and movement patterns of FMD susceptible *animals* and their products within and into the country;

- 5) submit a detailed plan on the programme to control and eventually eradicate FMD in the country or *zone* including:
 - a) the timeline;
 - b) the performance indicators to assess the efficacy of the control measures to be implemented;
- 6) submit evidence that FMD *surveillance*, taking into account provisions in Chapter 1.4. and the provisions on *surveillance* of this chapter, is in place;
- 7) 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*;
- 8) where *vaccination* is practised as a part of the *official control programme* for FMD, provide evidence (such as copies of legislation) that *vaccination* of selected populations is compulsory;
- 9) if applicable, provide detailed information on *vaccination* campaigns, in particular on:
 - a) target populations for *vaccination*;
 - b) monitoring of *vaccination* coverage, including serological monitoring of population immunity;
 - c) technical specification of the vaccines used and description of the licensing procedures in place;
 - d) the proposed timeline for the transition to the use of vaccines, fully compliant with the standards and methods described in the *Terrestrial Manual*;
- 10) provide an emergency preparedness and response plan to be implemented in case of *outbreaks*.

The Member's *official control programme* for FMD 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 according to 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 FMD that cannot be addressed by the programme.

Article 8.5.49.

The use and interpretation of serological tests (see Figure 1)

The recommended serological tests for FMD *surveillance* are described in the *Terrestrial Manual*.

Animals infected with FMDV produce antibodies to both the structural proteins (SP) and the nonstructural proteins (NSP) of the virus. Tests for SP antibodies to include SP-ELISAs and the virus neutralisation test (VNT). The SP tests are serotype specific and for optimal sensitivity should utilise an antigen or virus closely related to the field strain against which antibodies are being sought. Tests for NSP antibodies include NSP I-ELISA 3ABC and the electro-immunotransfer blotting technique (EITB) as recommended in the *Terrestrial Manual* or equivalent validated tests. In contrast to SP tests, NSP tests can detect antibodies to all serotypes of FMD virus. *Animals* vaccinated and subsequently infected with FMD virus develop antibodies to NSPs, but in some, the titre may be lower than that found in infected *animals* that have not been vaccinated. Both the NSP I-ELISA 3ABC and EITB tests have been extensively used in cattle. Validation in other species is ongoing. Vaccines used should comply with the standards of the *Terrestrial Manual* insofar as purity is concerned to avoid interference with NSP antibody testing.

Serological testing is a suitable tool for FMD *surveillance*. The choice of a serosurveillance system will depend on, amongst other things, the *vaccination* status of the country. A country, which is free from FMD without *vaccination*, may choose serosurveillance of high-risk subpopulations (e.g. based on geographical risk for exposure to FMDV).

SP tests may be used in such situations for screening sera for evidence of FMDV *infection/circulation* if a particular virus of serious threat has been identified and is well characterised. In other cases, NSP testing is recommended in order to cover a broader range of strains and even serotypes. In both cases, serological testing can provide additional support to clinical *surveillance*. Regardless of whether SP or NSP tests are used in countries that do not vaccinate, a diagnostic follow-up protocol should be in place to resolve any presumptive positive serological test results.

In areas where *animals* have been vaccinated, SP antibody tests may be used to monitor the serological response to the *vaccination*. However, NSP antibody tests should be used to monitor for FMDV *infection/circulation*. NSP-ELISAs may be used for screening sera for evidence of *infection/circulation* irrespective of the *vaccination* status of the *animal*. All *herds* with seropositive reactors should be investigated. Epidemiological and supplementary *laboratory* investigation results should document the status of FMDV *infection/circulation* for each positive *herd*. Tests used for confirmation should be of high diagnostic specificity to eliminate as many false positive screening test reactors as possible. The diagnostic sensitivity of the confirmatory test should approach that of the screening test. The EITB or another OIE-accepted test should be used for confirmation.

Information should be provided on the protocols, reagents, performance characteristics and validation of all tests used.

1. The follow-up procedure in case of positive test results if no vaccination is used in order to establish or re-establish FMD free status without vaccination

Any positive test result (regardless of whether SP or NSP tests were used) should be followed up immediately using appropriate clinical, epidemiological, serological and, where possible, virological investigations of the reactor *animal* at hand, of susceptible *animals* of the same *epidemiological unit* and of susceptible *animals* that have been in contact or otherwise epidemiologically associated with the reactor *animal*. If the follow-up investigations provide no evidence for FMDV *infection*, the reactor *animal* shall be classified as FMD negative. In all other cases, including the absence of such follow-up investigations, the reactor *animal* should be classified as FMD positive.

2. The follow-up procedure in case of positive test results if vaccination is used in order to establish or re-establish FMD free status with vaccination

In case of vaccinated populations, one has to exclude that positive test results are indicative of virus circulation. To this end, the following procedure should be followed in the investigation of positive serological test results derived from *surveillance* conducted on FMD vaccinated populations.

The investigation should examine all evidence that might confirm or refute the hypothesis that the positive results to the serological tests employed in the initial survey were not due to virus circulation. All the epidemiological information should be substantiated, and the results should be collated in the final report.

It is suggested that in the primary sampling units where at least one *animal* reacts positive to the NSP test, the following strategy(ies) should be applied:

- a) Following clinical examination, a second serum sample should be taken from the *animals* tested in the initial survey after an adequate interval of time has lapsed, on the condition that they are individually identified, accessible and have not been vaccinated during this period. The number of *animals* with antibodies against NSP in the population at the time of retest should be statistically either equal to or less than that observed in the initial test if virus is not circulating.

The *animals* sampled should remain in the holding pending test results and should be clearly identifiable. If the three conditions for retesting mentioned above cannot be met, a new serological survey should be carried out in the holding after an adequate period of time, repeating the application of the primary survey design and ensuring that all *animals* tested are individually identified. These *animals* should remain in the holding and should not be vaccinated, so that they can be retested after an adequate period of time.

- b) Following clinical examination, serum samples should be collected from representative numbers of susceptible *animals* that were in physical contact with the primary sampling unit. The magnitude and prevalence of antibody reactivity observed should not differ in a statistically significant manner from that of the primary sample if virus is not circulating.

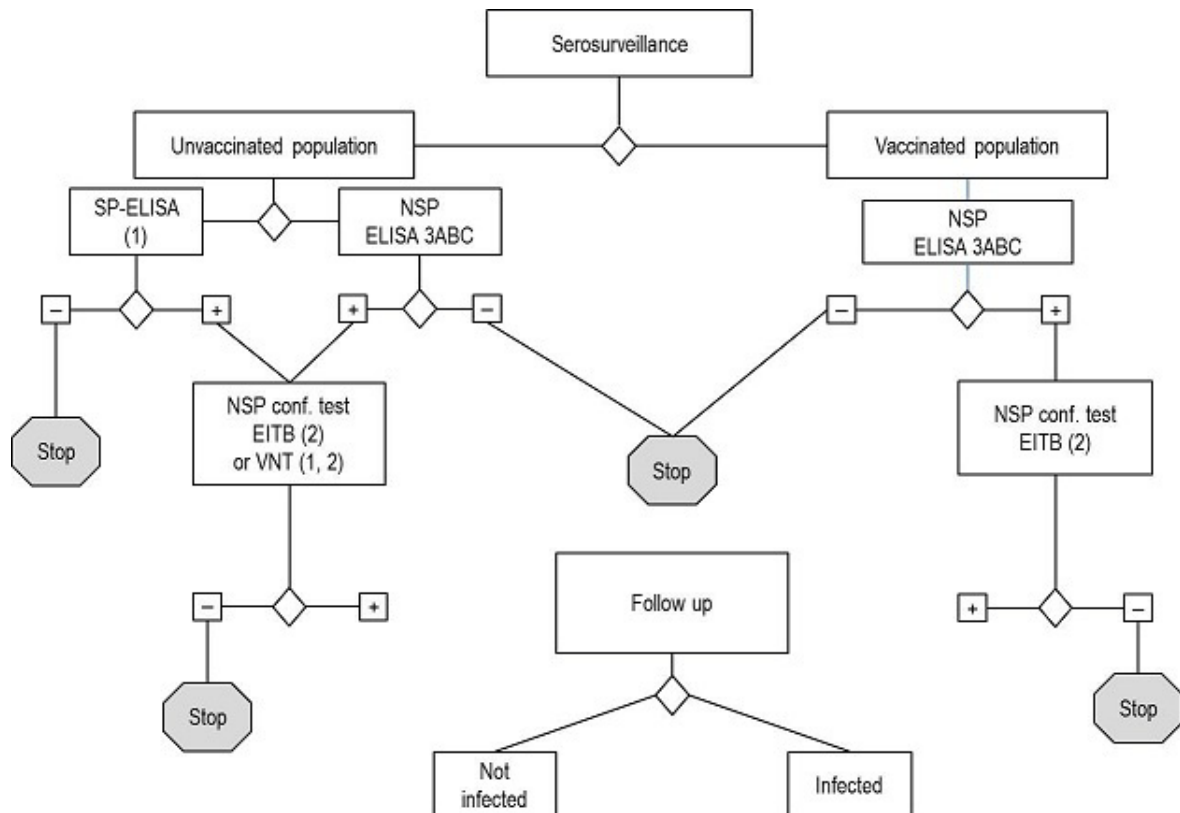
- c) Following clinical examination, epidemiologically linked *herds* should be serologically tested and satisfactory results should be achieved if virus is not circulating.
- d) Sentinel *animals* can also be used. These can be young, unvaccinated *animals* or *animals* in which maternally conferred immunity has lapsed and belonging to the same species resident within the positive initial sampling units. They should be serologically negative if virus is not circulating. If other susceptible, unvaccinated *animals* are present, they could act as sentinels to provide additional serological evidence.

Laboratory results should be examined in the context of the epidemiological situation. Corollary information needed to complement the serological survey and assess the possibility of viral circulation includes but is not limited to:

- characterization of the existing production systems;
- results of clinical *surveillance* of the suspects and their cohorts;
- quantification of *vaccinations* performed on the affected sites;
- sanitary protocol and history of the *establishments* with positive reactors;
- control of *animal identification* and movements;
- other parameters of regional significance in historic FMDV transmission.

The entire investigative process should be documented as standard operating procedure within the *surveillance* programme.

Fig. 1. Schematic representation of laboratory tests for determining evidence of FMDV infection through or following serological surveys



Key:	
ELISA	Enzyme-linked immunosorbent assay
VNT	Virus neutralisation test
NSP	Nonstructural protein(s) of foot and mouth disease virus (FMDV)
3ABC	NSP antibody test
EITB	Electro-immuno transfer blotting technique (Western blot for NSP antibodies of FMDV)
SP	Structural protein test
S	No evidence of FMDV

CHAPTER 8.6.

HEARTWATER

Article 8.6.1.

General provisions

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

Article 8.6.2.

Trade in commodities

Veterinary Authorities of countries free from heartwater may prohibit importation or transit through their territory, from countries considered infected with heartwater, of domestic and wild ruminants.

Article 8.6.3.

Recommendations for importation from countries considered infected with heartwater

For domestic and wild ruminants

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

- 1) showed no clinical sign of heartwater on the day of shipment;
 - 2) were subjected to a diagnostic test for heartwater with negative results during the 15 days prior to shipment;
 - 3) were treated with acaricides prior to shipment and were completely free of ticks.
-

CHAPTER 8.7.
JAPANESE ENCEPHALITIS

Article 8.7.1.

General provisions

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

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

Article 8.7.2.

Recommendations for importation from countries or zones infected with Japanese encephalitis

For horses

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

1) showed no clinical sign of Japanese encephalitis on the day of shipment; and

EITHER

2) were kept for the 21 days prior to shipment, in an insect-proof *quarantine station* and were protected from insect *vector* attack during their transportation from the *quarantine station* to the *place of shipment*;

OR

3) were vaccinated against Japanese encephalitis not less than 7 days and no more than 12 months prior to shipment.

CHAPTER 8.8.

NEW WORLD SCREWORM (*Cochliomyia hominivorax*) AND OLD WORLD SCREWORM (*Chrysomya bezziana*)

Article 8.8.1.

Recommendations for importation from countries considered infested with New World or Old World screwworm

For domestic and wild mammals

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

- 1) immediately prior to loading, the *animals* to be exported have been inspected, on the premises of origin, by an *official veterinarian*. After inspection for wounds with egg masses or larvae of New World or Old World screwworm, any infested *animal* has been rejected for export;
- 2) immediately prior to entering the quarantine pens in the *exporting country*:
 - a) each *animal* has been thoroughly examined for infested wounds, under the direct supervision of an *official veterinarian*, and that no *infestation* has been found in any *animal*; and
 - b) any wounds have been treated prophylactically with an officially approved oily larvicide at the recommended dose; and
 - c) all *animals* have been dipped, sprayed, or otherwise treated, immediately after inspection, with a product officially approved by the *importing* and *exporting countries* for the control of New World or Old World screwworm, under the supervision of an *official veterinarian* and in conformity with the manufacturer's recommendations;
- 3) at the end of the quarantine and immediately prior to shipment for export:
 - a) all *animals* have been re-examined for the presence of *infestation* and all *animals* have been found free of *infestation*;
 - b) all wounds have been prophylactically treated with an approved oily larvicide under the supervision of an *official veterinarian*;
 - c) all *animals* have been prophylactically treated again by dipping or spraying as in point 2 above.

Article 8.8.2.

Quarantine and transportation recommendations

- 1) The floor of the quarantine area and the *vehicles* must be thoroughly sprayed with an officially approved larvicide before and after each use.
- 2) The transit route must be the most direct, with no stopover without prior permission of the *importing country*.

Article 8.8.3.

Post importation inspection

- 1) On arrival at the importation point, all *animals* must be thoroughly inspected for wounds and possible New World or Old World screwworm *infestation* under the supervision of an *official veterinarian*.
- 2) The bedding material of the *vehicle* and the quarantine area should immediately be gathered and burned following each consignment.

Article 8.8.4.

Import/export of animal products

The larval stage of the New World or Old World screwworm fly is dependent on live *animals* and cannot survive for any length of time in dead tissue or animal products; therefore, restrictions on these products are not considered necessary.

CHAPTER 8.9.
PARATUBERCULOSIS

Article 8.9.1.

General provisions

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

CHAPTER 8.10.

INFECTION WITH RABIES VIRUS

Article 8.10.1.

General provisions

For the purposes of the *Terrestrial Code*:

- 1) Rabies is a *disease* caused by one member of the *Lyssavirus* genus: the *Rabies virus* (formerly referred to as classical rabies virus; genotype-1). All mammals are susceptible to *infection*.
- 2) A case is any *animal* infected with the *Rabies virus* species.
- 3) The *incubation period* for rabies is variable, and considered to be six months. The *infective period* for dogs, cats and ferrets is considered to start ten days before the onset of the first apparent clinical signs.

Globally, the most common source of exposure of humans to rabies virus is the dog. Other mammals, particularly members of the Orders Carnivora and Chiroptera, also present a risk.

The aim of this chapter is to mitigate the risk of rabies to human and animal health and to prevent the international spread of the *disease*.

For the purpose of the *Terrestrial Code*, a country that does not fulfil the requirements in Article 8.10.2. is considered to be infected with *Rabies virus*.

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

Members should implement and maintain a programme for the management of stray dog populations consistent with Chapter 7.7.

Article 8.10.2.

Rabies free country

A country may be considered free from rabies when:

- 1) the *disease* is notifiable and any change in the epidemiological situation or relevant events are reported in accordance with Chapter 1.1.;
- 2) an ongoing system of *disease surveillance* in accordance with Chapter 1.4. has been in operation for the last two years, with a minimum requirement being an on-going early detection programme to ensure investigation and reporting of rabies suspect *animals*;
- 3) regulatory measures for the prevention of rabies are implemented consistent with the recommendations in the *Terrestrial Code*, including for the importation of *animals*;
- 4) no case of indigenously acquired rabies virus *infection* has been confirmed during the past two years;
- 5) no imported case in the Orders Carnivora or Chiroptera has been confirmed outside a *quarantine station* for the past six months;
- 6) an imported human case of rabies does not affect the rabies free status.

Article 8.10.3.

Recommendations for importation from rabies free countries

For domestic mammals, and captive wild mammals

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

- 1) showed no clinical sign of rabies the day prior to or on the day of shipment;
- 2) and either:
 - a) were kept since birth or at least six months prior to shipment in a free country; or
 - b) were imported in conformity with the regulations stipulated in Articles 8.10.5., 8.10.6., 8.10.7. or 8.10.8.

Article 8.10.4.

Recommendations for importation from rabies free countries

For wild mammals

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

- 1) showed no clinical sign of rabies the day prior to or on the day of shipment;
- 2) and either:
 - a) have been captured at a distance that precludes any contact with *animals* in an infected country. The distance should be defined according to the biology of the species exported, including home range and long distance movements; or
 - b) have been kept in captivity for the six months prior to shipment in a rabies free country.

Article 8.10.5.

Recommendations for importation of dogs, cats and ferrets from countries considered infected with rabies

Veterinary Authorities should require the presentation of an *international veterinary certificate* complying with the model of Chapter 5.11, attesting that the *animals*:

- 1) showed no clinical sign of rabies the day prior to or on the day of shipment;
- 2) were permanently identified and their identification number stated in the *certificate*;

AND EITHER:

- 3) were vaccinated or revaccinated, in accordance with the recommendations of the manufacturer. The vaccine should have been produced and used in accordance with the *Terrestrial Manual*; and
- 4) were subjected not less than 3 months and not more than 12 months prior to shipment to an antibody titration test as prescribed in the *Terrestrial Manual* with a positive result of at least 0.5IU/ml;

OR

- 5) were kept in a *quarantine station* for six months prior to export.

Article 8.10.6.

Recommendations for importation of domestic ruminants, equids, camelids and suids from countries considered infected with rabies

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

- 1) showed no clinical sign of rabies the day prior to or on the day of shipment;
- 2) were permanently identified and the identification number stated in the *certificate*;
- 3) EITHER
 - a) were kept for the 6 months prior to shipment in an *establishment* where there has been no case of rabies for at least 12 months prior to shipment;

OR

 - b) were vaccinated or revaccinated in accordance with the recommendations of the manufacturer. The vaccine was produced and used in accordance with the *Terrestrial Manual*.

Article 8.10.7.

Recommendations for importation from countries considered infected with rabiesFor rodents and lagomorphs born and reared in a biosecure facility

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

- 1) showed no clinical sign of rabies on the day of shipment;
- 2) were kept since birth in a biosecure facility where there has been no case of rabies for at least 12 months prior to shipment.

Article 8.10.8.

Recommendations for importation of wildlife from countries considered infected with rabies

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

- 1) showed no clinical sign of rabies the day prior to or on the day of shipment;
- 2) were kept for the six months prior to shipment in an *establishment* where separation from susceptible *animals* was maintained and where there has been no case of rabies for at least 12 months prior to shipment.

CHAPTER 8.11.

RIFT VALLEY FEVER

Article 8.11.1.

General provisions

For the purposes of the *Terrestrial Code*, the *infective period* for Rift Valley fever (RVF) shall be 30 days.

For the purposes of this chapter, ruminants include camels.

The historic distribution of RVF is the sub-Saharan African continent, Madagascar and the Arabian Peninsula.

Countries or *zones* within the historic distribution of RVF or adjacent to those that are historically infected should be subjected to *surveillance*.

Epidemics of RVF may occur in infected areas after flooding. They are separated by inter-epidemic periods that may last for several decades in arid areas and, during these periods, the prevalence of *infection* in humans, *animals* and mosquitoes can be difficult to detect.

In the absence of clinical *disease*, the RVF status of a country or *zone* within the historically infected regions of the world should be determined by a *surveillance* programme (carried out in accordance with Chapter 1.4.) focusing on mosquitoes and serology of susceptible mammals. The programme should concentrate on parts of the country or *zone* at high risk because of historical, geographic and climatic factors, ruminant and mosquito population distribution, and proximity to areas where epidemics have recently occurred.

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

When authorising import or transit of the *commodities* covered in the chapter, with the exception of those listed in Article 8.11.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the RVF status of the ruminant population of the *exporting country or zone*.

Article 8.11.2.

Safe commodities

When authorising import or transit of the following *commodities* and any products made from them, *Veterinary Authorities* should not require any RVF related conditions, regardless of the RVF status of the ruminant population of the *exporting country or zone*:

- 1) hides and skins;
- 2) wool and fibre.

Article 8.11.3.

RVF infection free country or zone

A country or a *zone* may be considered free from RVF *infection* when the *disease* is notifiable in *animals* throughout the country and either:

- 1) the country or *zone* lies outside the historically infected regions, and not adjacent to historically *infections*; or
- 2) a *surveillance* programme as described in Article 8.11.1. has demonstrated no evidence of RVF *infection* in humans, *animals* or mosquitoes in the country or *zone* during the past four years following a RVF epidemic.

The provisions of the last paragraph of Article 8.11.1. may need to be complied with on a continuous basis in order to maintain freedom from *infection*, depending on the geographical location of the country or *zone*.

A RVF *infection* free country or *zone* in which *surveillance* and monitoring has found no evidence that RVF *infection* is present will not lose its free status through the importation of permanently marked seropositive *animals* or those destined for direct *slaughter*.

Article 8.11.4.

RVF infected country or zone without disease

A RVF *disease* free country or *zone* is a country or *zone* that is not *infection* free (see Article 8.11.3.) but in which *disease* has not occurred in humans or *animals* in the past six months provided that climatic changes predisposing to *outbreaks* of RVF have not occurred during this time.

Article 8.11.5.

RVF infected country or zone with disease

A RVF infected country or *zone* with *disease* is one in which clinical *disease* in humans or *animals* has occurred within the past six months.

Article 8.11.6.

Recommendations for importation from RVF infection free countries or zones

For ruminants

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

- 1) were kept in a RVF free country or *zone* since birth or for at least 30 days prior to shipment; and
- 2) if the *animals* were exported from a free *zone*, either:
 - a) did not transit through an *infected zone* during transportation to the *place of shipment*; or
 - b) were protected from mosquito attacks at all times when transiting through an *infected zone*.

Article 8.11.7.

Recommendations for importation from RVF infection free countries or zones

For meat and meat products of domestic and wild ruminants

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the products are derived from *animals* which remained in the RVF *infection* free country/free *zone* since birth or for the last 30 days.

Article 8.11.8.

Recommendations for importation from RVF infected countries/zones without disease

For ruminants

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

- 1) showed no evidence of RVF on the day of shipment;

- 2) met one of the following conditions:
 - a) were kept in a RVF infected country/*zone* free of *disease* since birth or for the last six months providing that climatic changes predisposing to *outbreaks* of RVF have not occurred during this time; or
 - b) were vaccinated against RVF at least 21 days prior to shipment with a modified live virus vaccine; or
 - c) were held in a mosquito-proof *quarantine station* for at least 30 days prior to shipment during which the *animals* showed no clinical sign of RVF and were protected from mosquitoes between quarantine and the *place of shipment* as well as at the *place of shipment*;

AND

- 3) did not transit through an *infected zone* with *disease* during transportation of the *place of shipment*.

Article 8.11.9.

Recommendations for importation from RVF infected countries or zones without disease

For meat and meat products of domestic and wild ruminants

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

- 1) the products are derived from *animals* which:
 - a) remained in the RVF infected country or *zone* without *disease* since birth or for the last 30 days;
 - b) were slaughtered in an approved *abattoir* and were subjected to ante- and post-mortem inspections for RVF with favourable results;
- 2) the carcasses from which the products were derived were submitted to maturation at a temperature above +2°C for a minimum period of 24 hours following *slaughter*.

Article 8.11.10.

Recommendations for importation from RVF infected countries or zones with disease

For ruminants

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

- 1) showed no evidence of RVF on the day of shipment;
- 2) were vaccinated against RVF at least 21 days prior to shipment with a modified live virus vaccine;

OR

- 3) were held in a mosquito-proof *quarantine station* for at least 30 days prior to shipment during which the *animals* showed no clinical sign of RVF and were protected from mosquito attacks between quarantine and the *place of shipment* as well as at the *place of shipment*.

Article 8.11.11.

Recommendations for importation from RVF infected countries or zones with disease

For meat and meat products of domestic and wild ruminants

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

- 1) are from *animals* which have been slaughtered in an approved *abattoir* and have been subjected to ante- and post-mortem inspections for RVF with favourable results; and

- 2) have been fully eviscerated and submitted to maturation at a temperature above +2°C for a minimum period of 24 hours following *slaughter*.

Article 8.11.12.

Recommendations for importation from RVF infected countries or zones with disease

For *in vivo* derived embryos of ruminants

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

- 1) showed no evidence of RVF within the period from 28 days prior to 28 days following collection of the embryos;
- 2) were vaccinated against RVF at least 21 days prior to collection with a modified live virus vaccine;

OR

- 3) were serologically tested on the day of collection and at least 14 days following collection and showed no significant rise in titre.

Article 8.11.13.

(Under study) Recommendations for importation from RVF infected countries or zones with disease or from RVF infected countries or zones without disease

For milk and milk products

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

- 1) was subjected to pasteurization; or
 - 2) was subjected to a combination of control measures with equivalent performance as described in the Codex Alimentarius Code of Hygienic Practice for Milk and Milk Products.
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CHAPTER 8.12.

RINDERPEST

Article 8.12.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for rinderpest (RP) shall be 21 days.

For the purpose of this chapter, a *case* includes an *animal* infected with rinderpest virus (RPV).

For the purpose of this chapter, susceptible *animals* apply to both domestic and wild artiodactyls.

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

Ban on *vaccination* against RP means a ban on administering a RP vaccine to any susceptible *animal* and a heterologous vaccine against RP to any large ruminants or pigs.

- 1) *Animal* not vaccinated against RP means:
 - a) for large ruminants and pigs: an *animal* that has received neither a RP vaccine nor a heterologous vaccine against RP;
 - b) for small ruminants: an *animal* that has not received a RP vaccine.
- 2) The following defines the occurrence of RPV *infection*:
 - a) RPV has been isolated and identified as such from an *animal* or a product derived from that *animal*; or
 - b) viral antigen or viral ribonucleic acid (RNA) specific to RP has been identified in samples from one or more *animals* showing one or more clinical signs consistent with RP, or epidemiologically linked to an *outbreak* of RP, or giving cause for suspicion of association or contact with RP; or
 - c) antibodies to RPV antigens which are not the consequence of *vaccination*, have been identified in one or more *animals* with either epidemiological links to a confirmed or suspected *outbreak* of RP in susceptible *animals*, or showing clinical signs consistent with recent *infection* with RP.

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

Article 8.12.2.

Rinderpest free country

To qualify for inclusion in the existing list of RP 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 RP during the past 24 months;
 - b) no evidence of RPV *infection* has been found during the past 24 months;
 - c) no *vaccination* against RP has been carried out during the past 24 months;

- 3) supply documented evidence that *surveillance* for both RP and RPV *infection* in accordance with Articles 8.12.20. to 8.12.27. is in operation and that regulatory measures for the prevention and control of RP have been implemented;
- 4) not have imported since the cessation of *vaccination* any *animals* vaccinated against RP.

The Member will be included in the list only after the submitted evidence has been accepted by the OIE. Changes in the epidemiological situation or other significant events should be reported to the OIE according to the requirements in Chapter 1.1.

Article 8.12.3.

Recovery of free status

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

- 1) three months after the last *case* where a *stamping-out policy* and serological *surveillance* are applied in accordance with Articles 8.12.20. to 8.12.27.; or
- 2) three months after the *slaughter* of all vaccinated *animals* where a *stamping-out policy*, emergency *vaccination* and serological *surveillance* are applied in accordance with Articles 8.12.20. to 8.12.27.; or
- 3) six months after the last *case* or the last *vaccination* (according to the event that occurs the latest), where a *stamping-out policy*, emergency *vaccination* not followed by the *slaughter* of all vaccinated *animals*, and serological *surveillance* are applied in accordance with Articles 8.12.20. to 8.12.27.

Where a *stamping-out policy* is not practised, the above waiting periods do not apply but Article 8.12.2. applies.

Article 8.12.4.

Infected country

When the requirements for acceptance as a RP free country are not fulfilled, a country shall be considered as RP infected.

Article 8.12.5.

Recommendations for importation from RP free countries

For RP susceptible animals

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

- 1) showed no clinical sign of RP on the day of shipment;
- 2) remained in a RP free country since birth or for at least 30 days prior to shipment.

Article 8.12.6.

Recommendations for importation from RP infected countries

For RP susceptible animals

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

- 1) RP is the subject of a national *surveillance* programme according to Articles 8.12.20. to 8.12.27.;

- 2) RP has not occurred within a ten-kilometre radius of the *establishment* of origin of the *animals* destined for export for at least 21 days prior to their shipment to the *quarantine station* referred to in point 3b) below;
- 3) the *animals*:
 - a) showed no clinical sign of RP on the day of shipment;
 - b) were kept in the *establishment* of origin since birth or for at least 21 days before introduction into the *quarantine station* referred to in point c) below;
 - c) have not been vaccinated against RP, were isolated in a *quarantine station* for the 30 days prior to shipment, and were subjected to a diagnostic test for RP on two occasions with negative results, at an interval of not less than 21 days;
 - d) were not exposed to any source of *infection* during their transportation from the *quarantine station* to the *place of shipment*;
- 4) RP has not occurred within a ten-kilometre radius of the *quarantine station* for 30 days prior to shipment.

Article 8.12.7.

Recommendations for importation from RP free countries

For semen of RP susceptible animals

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

- 1) the donor *animals*:
 - a) showed no clinical sign of RP on the day of collection of the semen;
 - b) were kept in a RP free country for at least three months prior to collection;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 8.12.8.

Recommendations for importation from RP infected countries

For semen of RP susceptible animals

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

- 1) RP is the subject of a national *surveillance* programme according to Articles 8.12.20. to 8.12.27.;
- 2) the donor *animals*:
 - a) showed no clinical sign of RP on the day of collection of the semen;
 - b) were kept in an *establishment* where no RP susceptible *animals* had been added in the 21 days before collection, and that RP has not occurred within 10 kilometres of the *establishment* for the 21 days before and after collection;
 - c) were vaccinated against RP at least three months prior to collection; or
 - d) have not been vaccinated against RP, and were subjected to a diagnostic test on two occasions with negative results, at an interval of not less than 21 days within the 30 days prior to collection;
- 3) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 8.12.9.

Recommendations for importation from RP free countriesFor *in vivo* derived embryos of RP susceptible animals

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

- 1) the donor females were kept in an *establishment* located in a RP free country at the time of collection;
- 2) the embryos were collected, processed and stored in conformity with the provisions of Chapters 4.7. and 4.9., as relevant.

Article 8.12.10.

Recommendations for importation from RP infected countriesFor *in vivo* derived embryos of RP susceptible animals

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

- 1) RP is the subject of a national *surveillance* programme according to Articles 8.12.20. to 8.12.27.;
- 2) the donor females:
 - a) and all other *animals* in the *establishment* showed no clinical sign of RP at the time of collection and for the following 21 days;
 - b) were kept in an *establishment* where no RP susceptible *animals* had been added in the 21 days before collection of the embryos;
 - c) were vaccinated against RP at least three months prior to collection; or
 - d) have not been vaccinated against RP, and were subjected to a diagnostic test for RP on two occasions with negative results, at an interval of not less than 21 days within the 30 days prior to collection;
- 3) the embryos were collected, processed and stored in conformity with the provisions of Chapters 4.7. and 4.9., as relevant.

Article 8.12.11.

Recommendations for importation from RP free countriesFor fresh meat or meat products of susceptible animals

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the entire consignment comes from *animals* which have been kept in the country since birth or for at least three months prior to *slaughter*.

Article 8.12.12.

Recommendations for importation from RP infected countriesFor fresh meat (excluding offal) of susceptible animals

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

- 1) comes from a country where RP is the subject of a national *surveillance* programme according to Articles 8.12.20. to 8.12.27.;

- 2) comes from *animals* which:
 - a) showed no clinical sign of RP within 24 hours before *slaughter*;
 - b) have remained in the country for at least three months prior to *slaughter*;
 - c) were kept in the *establishment* of origin since birth or for at least 30 days prior to shipment to the approved *abattoir*, and that RP has not occurred within a ten-kilometre radius of the *establishment* during that period;
 - d) were vaccinated against RP at least three months prior to shipment to the approved *abattoir*;
 - e) had been transported, in a *vehicle* which was cleansed and disinfected before the *animals* were loaded, directly from the *establishment* of origin to the approved *abattoir* without coming into contact with other *animals* which do not fulfil the required conditions for export;
 - f) were slaughtered in an approved *abattoir* in which no RP has been detected during the period between the last *disinfection* carried out before *abattoir* and the date on which the shipment has been dispatched.

Article 8.12.13.

Recommendations for importation from RP infected countries

For meat products of susceptible animals

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

- 1) only *fresh meat* complying with the provisions of Article 8.12.12. has been used in the preparation of the *meat products*; or
- 2) the *meat products* have been processed to ensure the destruction of the RPV in conformity with one of the procedures referred to in Article 8.5.34.;
- 3) the necessary precautions were taken after processing to avoid contact of the *meat products* with any possible source of RPV.

Article 8.12.14.

Recommendations for importation from RP free countries

For milk and milk products intended for human consumption and for products of animal origin (from RP susceptible animals) intended for use in animal feeding or for agricultural or industrial use

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products come from *animals* which have been kept in the country since birth or for at least three months.

Article 8.12.15.

Recommendations for importation from RP infected countries

For milk and cream

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

- 1) these products:
 - a) originate from *herds* or *flocks* which were not subjected to any restrictions due to RP at the time of *milk* collection;
 - b) have been processed to ensure the destruction of the RPV in conformity with one of the procedures referred to in Articles 8.5.38. and 8.5.39.;

- 2) the necessary precautions were taken after processing to avoid contact of the products with any potential source of RPV.

Article 8.12.16.

Recommendations for importation from RP infected countries

For milk products

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

- 1) these products are derived from *milk* complying with the above requirements;
- 2) the necessary precautions were taken after processing to avoid contact of the *milk products* with a potential source of RPV.

Article 8.12.17.

Recommendations for importation from RP infected countries

For blood and meat-meals (from susceptible animals)

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the manufacturing method for these products included heating to a minimum internal temperature of 70°C for at least 30 minutes.

Article 8.12.18.

Recommendations for importation from RP infected countries

For wool, hair, bristles, raw hides and skins (from susceptible animals)

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

- 1) these products have been processed to ensure the destruction of the RPV in conformity with one of the procedures referred to in Articles 8.5.35., 8.5.36. and 8.5.37.;
- 2) the necessary precautions were taken after processing to avoid contact of the products with any potential source of RPV.

Veterinary Authorities can authorise, without restriction, the 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), provided that these products have been submitted to the usual chemical and mechanical processes in use in the tanning industry.

Article 8.12.19.

Recommendations for importation from RP infected countries

For hooves, claws, bones and horns, hunting trophies and preparations destined for museums (from susceptible animals)

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

- 1) were completely dried and had no trace on them of skin, flesh or tendon; and/or
- 2) have been adequately disinfected.

Article 8.12.20.

Surveillance: introduction

Articles 8.12.20. to 8.12.27. define the principles and provides a guide for the *surveillance* of RP in accordance with Chapter 1.4. applicable to Members seeking establishment of freedom from RP. Guidance is provided for Members seeking reestablishment of freedom from RP, following an *outbreak* and for the maintenance of RP free status.

Surveillance strategies employed for demonstrating freedom from RP at an acceptable level of confidence will need to be adapted to the local situation. *Outbreaks* of RP in cattle may be graded as per-acute, acute or sub-acute. Differing clinical presentations reflect variations in levels of innate host resistance (*Bos indicus* breeds being more resistant than *B. taurus*), and variations in the virulence of the attacking strain. Experience has shown that syndromic *surveillance* strategies i.e. *surveillance* based on a predefined set of clinical signs (e.g. searching for “stomatitis-enteritis syndrome”) are useful to increase the sensitivity of the system. It is generally accepted that unvaccinated populations of cattle are likely to promote the emergence of virulent strains and associated epidemics while partially vaccinated populations favour the emergence of mild strains associated with endemic situations. In the case of per-acute cases the presenting sign may be sudden death. In the case of sub-acute (mild) cases, clinical signs are irregularly displayed and difficult to detect.

In certain areas there are some key *wildlife* populations, especially African buffaloes, which act as sentinels for RP *infection*. These subpopulations should be included in the design of the *surveillance* strategy.

Surveillance for RP should be in the form of a continuing programme designed to establish that the whole country is free from RPV *infection*.

Article 8.12.21.

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 RP to a *laboratory* for RP diagnoses as described in the *Terrestrial Manual*.
- 2) The RP *surveillance* programme should:
 - a) include an early warning system throughout the production, marketing and processing chain for reporting suspicious cases. Farmers and workers who have day-to-day contact with livestock, as well as diagnosticians, should report promptly any suspicion of RP. They should be supported directly or indirectly (e.g. through private *veterinarians* or *veterinary para-professionals*) by government information programmes and the *Veterinary Authority*. All significant epidemiological events consistent with “stomatitis-enteritis syndrome” 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 RP 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 RP infected country.

An effective *surveillance* system will periodically identify suspicious cases compatible with the “stomatitis-enteritis syndrome” that require follow-up and investigation to confirm or exclude that the cause of the condition is RPV. 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 RPV *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 8.12.22.

Surveillance strategies1. Introduction

The target population for *surveillance* aimed at identifying *disease* and *infection* should cover all significant populations of susceptible species within the country to be recognised as free from RPV *infection*.

The strategy employed can be based on randomised sampling requiring *surveillance* consistent with demonstrating the absence of RPV *infection* at an acceptable level of statistical confidence. The frequency of sampling should be dependent on the epidemiological situation. Targeted *surveillance* (e.g. based on the increased likelihood of *infection* in particular localities or species) can be an appropriate strategy. The applicant Member should justify the *surveillance* strategy chosen as adequate to detect the presence of RPV *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. For targeted *surveillance* consideration should be given to the following:

- a) historical *disease* patterns (risk mapping) – clinical, participatory and laboratory-based;
- b) critical population size, structure and density;
- c) livestock husbandry and farming systems;
- d) movement and contact patterns – markets and other trade-related movements;
- e) transmission parameters (e.g. virulence of the strain, animal movements);
- f) *wildlife* and other species demography.

For random surveys, the design of the sampling strategy will need to take into account the expected *disease* 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 expected 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.

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 needs to 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* which may be epidemiologically linked to it.

The principles involved in *surveillance* for *disease/infection* are technically well defined in Chapter 1.4. The design of *surveillance* programmes to prove the absence of RPV *infection* needs to 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.

2. Clinical surveillance

Clinical *surveillance* aims at detecting clinical signs of “stomatitis-enteritis syndrome” by close physical examination of susceptible *animals*. Whereas significant emphasis is placed on the diagnostic value of mass serological screening, *surveillance* based on clinical inspection should not be underrated. It 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 by the collection of appropriate samples such as ocular and nasal swabs, blood or other tissues for virus isolation. Clinical *surveillance* and laboratory testing should always be applied in series to clarify the status of RP suspects detected by either

of these complementary diagnostic approaches. Laboratory testing may 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.

Active search for clinical *disease* can include participatory disease searching, tracing backwards and forwards, and follow-up investigations. Participatory disease *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.

It is essential that all RPV isolates are sent to an OIE Reference Laboratory to determine the biological characteristics of the causative virus as well as its genetic and antigenic characterization.

3. Virological surveillance

Given that RP is an acute *infection* with no known carrier state, virological *surveillance* using tests described in the *Terrestrial Manual* should be conducted to confirm clinically suspect cases. Applying virological methods in seropositive *animals* is not regarded as an efficient approach.

4. Serological surveillance

Serological *surveillance* aims at detecting antibodies against RPV. Positive RPV antibody test results can have four possible causes:

- a) natural *infection* with RPV;
- b) *vaccination* against RP;
- c) maternal antibodies derived from an immune dam (maternal antibodies in cattle can be found only up to 12 months of age);
- d) heterophile (cross) and other non-specific reactions.

Article 8.12.23.

Selection of cattle and buffaloes for serosurveillance

Mis-ageing of cattle selected for serosurveillance is the most common source of error. Colostral immunity can persist almost up to one year of age when measured by the H c-ELISA. Thus, it is essential to exclude from sampling buffaloes and cattle less than one year of age. In addition, it is frequently necessary to be able to exclude those which are older than a certain age, for example, to select only those born after cessation of *vaccination*.

It is important to select a cohort of cattle possessing only one pair of permanent incisors to preclude any interference from maternal immunity derived from earlier *vaccination* or *infection* and ensure that vaccinated cattle are not included.

Although it is stressed here that *animals* with milk teeth only are not suitable for *surveillance* based on serology, they are of particular interest and importance in *surveillance* for clinical *disease*. After the loss of colostral immunity, by about one year of age, these are the *animals* which are most likely to suffer the more severe disease form and in which to look for lesions indicative of RP.

It may be possible to use serum collected for other survey purposes for RP *surveillance*. However, the principles of survey design described in this chapter and the requirement for a statistically valid survey for the presence of RPV 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 RPV *infection* is not present in a country. It is therefore essential that the survey be adequately documented.

Article 8.12.24.

Wildlife surveillance where a significant susceptible wildlife population exists

There are some key *wildlife* populations, especially African buffaloes, which act as sentinels for RP *infection*. Where a significant population of a susceptible *wildlife* species exists, serosurveillance data should be collected to support absence of *infection*. Detection of virus circulation in *wildlife* can be undertaken indirectly by sampling contiguous livestock populations.

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

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

Wildlife form transboundary populations; therefore, any data from the population could be used to represent the result for the ecosystem and be submitted by more than one Member in an application to the OIE (even if the sampling was not obtained in the territory of the OIE Member submitting the application). It is recommended therefore that the OIE Member Countries or Territories represented in a particular ecosystem should coordinate their sampling programmes.

Where the serological history of the *herd* is known from previous work (as might be the case for a sentinel *herd*), repeat sampling need only focus on the untested age groups, born since the last known *infection*. The sample needs to be taken according to the known epidemiology of the *disease* in a given species. Samples collected from hunted *animals*, which are positive, should not be interpreted without a targeted survey to confirm the validity of these results. Such sampling cannot follow a defined protocol and therefore can only provide background information.

Article 8.12.25.

Members applying for recognition of freedom from RP

In addition to the general conditions described in this chapter, a Member applying for recognition of RP freedom for the country 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 RPV *infection*, during the preceding 24 months in susceptible populations. This requires the support of a national or other *laboratory* able to undertake identification of RPV *infection* through virus/antigen/genome detection and antibody tests described in the *Terrestrial Manual*.

Article 8.12.26.

Members re-applying for recognition of freedom from RP following an outbreak

Following an *outbreak*, or *outbreaks*, of RP in a Member at any time after recognition of RP 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* or *outbreaks*, a Member wishing to regain the status 'free from rinderpest' should undertake serosurveillance according to this chapter to determine the extent of virus spread. In addition to the

general conditions described in this chapter, a Member re-applying for recognition of country freedom from RP should show evidence of an active *surveillance* programme for RP as well as absence of RPV *infection*.

If investigations show the *outbreak* virus originated from outside the country, provided the *outbreak* was localised, rapidly contained and speedily eliminated, and provided there was no serological evidence of virus spread outside the index infected area, accreditation of freedom could proceed rapidly. It should be established that the *outbreaks* were contained, eliminated and did not represent endemic *infection*.

Article 8.12.27.

The use and interpretation of serological tests for serosurveillance of RP

Serological testing is an appropriate tool to use for RP *surveillance*. The prescribed serological tests which should be used for RP *surveillance* are described in the *Terrestrial Manual*; these are of high diagnostic specificity and minimise the proportion of false positive reactions. Antibodies to virulent strains and the Kabete O vaccine strain of RPV can be detected in cattle from about 10 days post *infection* (approximately 7 days after the appearance of fever) and peak around 30 to 40 days post *infection*. Antibodies then persist for many years, possibly for life, although titres decline with time. In the case of less virulent strains the detection of the antibody response by ELISA may be delayed by as much as three weeks. There is only one serotype of virus and the tests will detect antibodies elicited by *infection* with all RP viruses but the tests cannot discriminate between antibodies to field *infection* and those from *vaccination* with attenuated vaccines. This fact compromises serosurveillance in vaccinated populations and realistically meaningful serosurveillance can only commence once *vaccination* has ceased for several years. In these circumstances, dental ageing of cattle and buffaloes is of great value to minimise the inclusion of *animals* seropositive by virtue of colostral immunity and historic *vaccination* or *infection*. The cohort of cattle with one single set of central incisors is the most appropriate to sample (see footnote ²).

The test most amenable to the mass testing of sera as required to demonstrate freedom from *infection* is the H c-ELISA. Practical experience from well-controlled serological *surveillance* in non-vaccinated populations in Africa and Asia demonstrate that one can expect false positive reactions in 0.05 percent or less of sera tested. The sensitivity of the test approaches 100 percent (relative to the VNT) in Kabete O vaccinated cattle and *infection* with highly virulent viruses but is lower in the case of low virulence strains. Experience supported by experimental studies indicates that in all cases sensitivity exceeds 70 percent.

Only tests approved by the OIE as indicated in the *Terrestrial Manual* should be used to generate data presented in support of applications for accreditation of RP freedom. It is necessary to demonstrate that apparently positive serological results have been adequately investigated. The follow-up studies should use appropriate clinical, epidemiological, serological and virological investigations. By this means the investigation should examine all evidence that might confirm or refute the hypothesis that the positive results to the serological tests employed in the survey were not due to virus circulation.

The prescribed serological tests have not been fully validated for use in all wild species. From the collective experience of the reference laboratories and experts over the years, an appropriate test protocol for *wildlife* is based on the high expected sero-prevalence in a previously infected buffalo *herd* which is 99 percent seroconversion of eligible *animals* within a *herd* as detected by use of a 100 percent sensitive test. No single test can achieve this but combining the H c-ELISA with the VNT raises sensitivity close to 100 percent.

1 JAMES A.D. (1998). Guide to epidemiological surveillance for rinderpest. *Rev. Sci. Tech.* 17 (3), 796–824.

2 Pragmatically and solely for the purposes of serosurveillance, it can be accepted that cattle having one pair of erupted permanent central incisor teeth are aged between 21 and 36 months (Asian buffaloes 24 to 48 months) and cattle having only two pairs of erupted permanent central incisor teeth are aged between 30 and 48 months (Asian buffaloes 48–60 months).

CHAPTER 8.13.

TRICHINELLOSIS (*Trichinella spiralis*)

Article 8.13.1.

General provisions

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

Article 8.13.2.

Trichinellosis free country or zone

A country or *zone* may be considered free from trichinellosis in domestic swine when:

- 1) trichinellosis is notifiable in the country;
- 2) there is in force an effective *disease* reporting system shown to be capable of capturing the occurrence of cases;

AND EITHER:

- 3) it has been ascertained that *Trichinella infestation* does not exist in the domestic swine population of the country or *zone* under consideration; this is established by the regular *surveillance* of the swine population using an approved testing procedure, which provided negative results when:
 - a) within a five-year period, a serological survey was conducted on a statistically based sample size from within the slaughter sow population sufficient to provide at least 95 percent confidence of detecting trichinellosis if it was present at a prevalence exceeding 0.02 percent, and

during this five-year period, continuous testing was conducted on a statistically based sample size from within the annual slaughter swine population sufficient to provide at least 95 percent confidence of detecting trichinellosis if it is present at a prevalence exceeding 0.01 percent, following which:
 - b) a serological survey is carried out every third year on the slaughter sow population sufficient to provide at least 95 percent confidence of detecting trichinellosis if it is present at a prevalence exceeding 0.2 percent; during this time the number of samples in the slaughter swine population could be reduced to detect at the 0.5 percent level on an annual basis;

OR

- 4) in the country or *zone* under consideration, the following conditions are met:
 - a) trichinellosis has not been reported in the domestic swine population for at least five years;
 - b) wild susceptible species are subjected to a regular *surveillance* programme, and no clinical, serological or epidemiological evidence of trichinellosis has been found;
- 5) the regular *surveillance* described in point 3 above is carried out and should be concentrated where *infestation* was last identified, and/or where the feeding of swill to swine occurs;
- 6) any suspicion of *disease* is followed at the field level by traceback, quarantine and laboratory testing;
- 7) if trichinellosis is confirmed, the infected premises remains under *official control programme* and is subjected to disease control measures using a *stamping-out policy* and rodent control;
- 8) all feeding of swill is officially regulated;

- 9) any human outbreaks of trichinellosis are investigated to determine the animal source.

Article 8.13.3.

Trichinellosis free herd

(under study).

Article 8.13.4.

Recommendations for the importation of fresh meat of swine (domestic and wild)

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

- 1) comes from domestic swine which have been slaughtered and inspected in an approved *abattoir* or wild swine which have been inspected;

AND

- 2) were subjected to a testing procedure for trichinellosis with negative results; or
- 3) comes from domestic swine which were born and bred in a country or *zone* free from trichinellosis in domestic swine; or
- 4) has been processed to ensure the destruction of all the larvae of the parasite.

Article 8.13.5.

Recommendations for the importation of fresh meat of equines (domestic and wild)

Veterinary Authorities of importing countries may require the presentation of an *international veterinary certificate* attesting that the entire consignment of *meat*:

- 1) comes from equines slaughtered and/or inspected in an approved *abattoir*;

AND

- 2) were subjected to a testing procedure for trichinellosis with negative results; or
- 3) has been processed to ensure the destruction of all the larvae of the parasite.
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CHAPTER 8.14.

TULAREMIA

Article 8.14.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for tularemia (in hares, genus *Lepus*) shall be 15 days.

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

Article 8.14.2.

Tularemia free country

A country may be considered free from tularemia when it has been shown that tularemia has not been present for at least the past two years and when bacteriological or serological surveys in previously *infected zones* have given negative results.

Article 8.14.3.

Tularemia infected zone

A *zone* shall be considered as infected with tularemia:

1) until at least one year has elapsed after the last *case* has been confirmed;

AND

2) when a bacteriological survey on ticks within the *infected zone* has given negative results; or

3) when regular serological testing of hares and rabbits from that *zone* have given negative results.

Article 8.14.4.

Trade in commodities

Veterinary Authorities of tularemia free countries may prohibit importation or transit through their territory, from countries considered infected with tularemia, of live hares.

Article 8.14.5.

Recommendations for importation from countries considered infected with tularemia

For live hares

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

1) showed no clinical sign of tularemia on the day of shipment;

2) were not kept in a tularemia *infected zone*;

3) have been treated against parasites (ticks); and

- 4) were kept in a *quarantine station* for the 15 days prior to shipment.
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CHAPTER 8.15.

VESICULAR STOMATITIS

Article 8.15.1.

General provisions and safe commodities

For the purposes of the *Terrestrial Code*, the *incubation period* for vesicular stomatitis (VS) shall be 21 days.

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

When authorizing the import or transit of the following *commodities* and any products made from these *commodities*, *Veterinary Authorities* should not require any VS related conditions, regardless of the VS status of the *exporting country*:

- 1) *milk and milk products*;
- 2) *hides and skins*;
- 3) *meat and meat products*;
- 4) *tallow*;
- 5) *gelatine and collagen*.

Article 8.15.2.

VS free country

A country may be considered free from VS when:

- 1) VS is notifiable in the country;
- 2) no clinical, epidemiological or other evidence of VS has been found during the past two years.

Article 8.15.3.

Trade in commodities

Veterinary Authorities of countries shall consider whether there is a risk with regard to VS in accepting importation or transit through their territory, from other countries, of ruminants, swine, Equidae, and their semen and embryos.

Article 8.15.4.

Recommendations for importation from VS free countries

For domestic cattle, sheep, goats, pigs and horses

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

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

Article 8.15.5.

Recommendations for importation from VS free countries

For wild bovine, ovine, caprine, porcine and equine animals and deer

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

- 1) showed no clinical sign of VS on the day of shipment;
- 2) come from a VS free country;

if the country of origin has a common border with a country considered infected with VS:

- 3) were kept in a *quarantine station* for the 30 days prior to shipment and were subjected to a diagnostic test for VS with negative results at least 21 days after the commencement of quarantine;
- 4) were protected from insect vectors during quarantine and transportation to the *place of shipment*.

Article 8.15.6.

Recommendations for importation from countries considered infected with VS

For domestic cattle, sheep, goats, pigs and horses

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

- 1) showed no clinical sign of VS on the day of shipment;
- 2) were kept, since birth or for the past 21 days, in an *establishment* where no *case* of VS was officially reported during that period;
- 3) were kept in a *quarantine station* for the 30 days prior to shipment and were subjected to a diagnostic test for VS with negative results at least 21 days after the commencement of quarantine;
- 4) were protected from insect vectors during quarantine and transportation to the *place of shipment*.

Article 8.15.7.

Recommendations for importation from countries considered infected with VS

For wild bovine, ovine, caprine, porcine and equine animals and deer

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

- 1) showed no clinical sign of VS on the day of shipment;
- 2) were kept in a *quarantine station* for the 30 days prior to shipment and were subjected to a diagnostic test for VS with negative results at least 21 days after the commencement of quarantine;
- 3) were protected from insect *vectors* during quarantine and transportation to the *place of shipment*.

Article 8.15.8.

Recommendations for importation from VS free countries or zonesFor *in vivo* derived embryos of ruminants, swine and horses

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

- 1) the donor females were kept in an *establishment* located in a VS free country or *zone* at the time of collection;
- 2) the embryos were collected, processed and stored in conformity with the provisions of Chapters 4.7. and 4.9., as relevant.

Article 8.15.9.

Recommendations for importation from countries or zones considered infected with VSFor *in vivo* derived embryos of ruminants, swine and horses

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

- 1) the donor females:
 - a) were kept for the 21 days prior to, and during, collection in an *establishment* where no *case* of VS was reported during that period;
 - b) were subjected to a diagnostic test for VS, with negative results, within the 21 days prior to embryo collection;
 - 2) the embryos were collected, processed and stored in conformity with the provisions of Chapters 4.7. and 4.9., as relevant.
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CHAPTER 8.16.

WEST NILE FEVER

Article 8.16.1.

General provisions

West Nile fever (WNF) is a zoonotic *disease* caused by certain strains of the mosquito transmitted West Nile virus (WNV).

For the purpose of this chapter, the susceptible species are equidae, geese, ducks (under study) and birds other than *poultry*.

WNV is maintained in a mosquito–bird–mosquito transmission cycle, whereas humans and equidae are considered dead-end hosts. Most human *infections* occur by natural transmission from mosquitoes.

In relation to domestic animal trade, geese and ducks pose a *risk* for the spread of the WNV as some species have been documented to develop a viraemia sufficient to infect mosquitoes.

Surveillance for WNF should be carried out according to Chapter X.X.

The following criteria define the occurrence of WNF:

- 1) WNV has been isolated from an *animal* that shows signs consistent with WNF; or
- 2) viral antigen or viral ribonucleic acid (RNA) specific to WNV has been identified in samples from one or more *animals* that show clinical signs consistent with WNF, or that is epidemiologically linked to a confirmed or suspected *outbreak* of WNF; or
- 3) antibodies to WNV have been identified in an unvaccinated *animal* that shows clinical signs consistent with WNF, or that is epidemiologically linked to a confirmed or suspected *outbreak* of WNF.

For the purposes of the *Terrestrial Code*, the *incubation period* for WNF shall be 15 days.

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

When authorising import or transit of the *commodities* covered in the chapter, with the exception of those listed in Article 8.16.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the WNF status of the *exporting country or zone*.

Article 8.16.2.

Safe commodities

Members should not impose trade restrictions on dead-end hosts such as horses.

When authorising import or transit of the following *commodities* and any products made from these, *Veterinary Authorities* should not require any WNV related conditions, regardless of the WNF status of the *exporting country or zone*:

- 1) *hatching eggs*;
- 2) eggs for human consumption;
- 3) egg products;
- 4) *poultry* semen;
- 5) *fresh meat* and *meat products* of *poultry*;

- 6) products of *poultry* origin intended for use in animal feeding, or for agricultural or industrial use;
- 7) feathers and down from *poultry*;
- 8) semen of horses;
- 9) *meat* and *meat products* of horses.

Article 8.16.3.

WNF free country or zone

- 1) A country or *zone* may be considered free from WNF when WNF is notifiable in the whole country and either:
 - a) no occurrence of WNF *cases*, where *infection* occurred within the territory of the Member, have been recorded for the past two years; or
 - b) a *surveillance* programme in accordance with Chapter X.X. has demonstrated no evidence of WNV in the country or *zone* during the past two years.
- 2) A WNF free country or *zone* will not lose its free status through the importation from WNF infected countries or *infected zones* of:
 - a) seropositive *animals*;
 - b) semen, embryo or ova;
 - c) *animals* vaccinated in accordance with the *Terrestrial Manual* at least 30 days prior to dispatch, and are identified in the accompanying certification as having been vaccinated; or
 - d) *animals* not vaccinated if a *surveillance* programme in accordance with Chapter X.X. has been in place in the source population for a period of 30 days immediately prior to dispatch, and no evidence of WNV transmission has been detected.

Article 8.16.4.

WNF seasonally free country or zone

- 1) A WNF seasonally free country or *zone* is one in which for part of a year, *surveillance* demonstrates no evidence either of WNV transmission or presence of mosquitoes likely to be competent WNV *vectors*.
- 2) For the application of Article 8.16.6., the seasonally free period is taken to commence 21 days following the last evidence of WNV transmission (as demonstrated by the *surveillance* programme), or the cessation of activity of mosquitoes likely to be competent WNV *vectors*.
- 3) For the application of Article 8.16.6., the seasonally free period is taken to conclude either:
 - a) at least 21 days before the earliest date that historical data show WNV transmission cycle has recommenced; or
 - b) immediately if current climatic data or data from a *surveillance* programme indicate an earlier resurgence of activity of mosquitoes likely to be competent WNV *vectors*.
- 4) A WNF seasonally free country or *zone* will not lose its free status through the importation from WNF infected countries or *infected zones* of:
 - a) seropositive *animals*;
 - b) semen, embryo or ova;
 - c) *animals* vaccinated in accordance with the *Terrestrial Manual* at least 30 days prior to dispatch, and are identified in the accompanying certification as having been vaccinated; or

- d) *animals* not vaccinated if a *surveillance* programme in accordance with Chapter X.X. has been in place in the source population for a period of 30 days immediately prior to dispatch, and no evidence of WNV transmission has been detected.

Article 8.16.5.

Recommendations for importation from WNF free countries or zones

For ducks (under study), geese and birds other than poultry

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

- 1) the *animals* were kept in a WNF free country or *zone* since birth or for at least 30 days prior to shipment; or
- 2) the *animals* were kept in a WNF free country or *zone* for at least 15 days, were subjected, with negative results, to an agent identification test according to the *Terrestrial Manual* carried out on a sample collected at least 3 days after the commencement of the residence period and remained in the WNF free country or *zone* until shipment; or
- 3) the *animals*:
 - a) were vaccinated in accordance with the *Terrestrial Manual* 30 days before introduction into the free country or *zone*; and
 - b) were identified as having been vaccinated; and
 - c) were kept in a WNF free country or *zone* for at least 15 days; and
 - d) remained in the WNF free country or *zone* until shipment;

AND

- 4) if the *animals* were exported from a WNF free *zone*, either:
 - a) did not transit through an infected country or *infected zone* during transportation to the *place of shipment*; or
 - b) were protected from mosquito attacks at all times when transiting through an infected country or *infected zone*; or
 - c) had been vaccinated in accordance with point 3 above.

Article 8.16.6.

Recommendations for importation from WNF seasonally free countries or zones

For ducks (under study), geese and birds other than poultry

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

- 1) were kept during the seasonally free period in a WNF seasonally free country or *zone* since birth or for at least 30 days prior to shipment; or
- 2) were kept during the WNF seasonally free period in a WNF seasonally free country or *zone* for at least 15 days prior to shipment, and were subjected during the residence period in the country or *zone* to an agent identification test according to the *Terrestrial Manual*, with negative results, carried out on a sample collected at least 3 days after the commencement of the residence period and remained in the WNF seasonally free country or *zone* until shipment; or
- 3) were kept during the seasonally free period in a WNF seasonally free country or *zone* for at least 15 days prior to shipment, and were vaccinated in accordance with the *Terrestrial Manual* 30 days before introduction

into the free country or *zone* against WNF, were identified as having been vaccinated and remained in the WNF seasonally free country or *zone* until shipment;

AND

- 4) if the *animals* were exported from a WNF seasonally free country or *zone*, either:
 - a) did not transit through an infected country or *infected zone* during transportation to the *place of shipment*; or
 - b) were protected from mosquito attacks at all times when transiting through an infected country or *infected zone*; or
 - c) were vaccinated in accordance with point 3 above.

Article 8.16.7.

Recommendations for importation from WNF infected countries or infected zones

For ducks (under study) and geese

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

- 1) were protected from mosquito attacks for at least 30 days prior to shipment; or
- 2) were subjected to a serological test according to the *Terrestrial Manual* to detect WNV neutralizing antibodies with positive results; or
- 3) were protected from mosquito attacks for at least 15 days prior to shipment, and were subjected during that period to an agent identification test according to the *Terrestrial Manual*, with negative results, carried out on a sample collected at least 3 days after being introduced in the mosquito-free *zone*; or
- 4) were vaccinated at least 30 days before shipment in accordance with the *Terrestrial Manual* against WNV and were identified in the accompanying certification as having been vaccinated; or
- 5) are not vaccinated and a *surveillance* programme in accordance with Chapter X.X. has been in place in the source population for a period of 30 days immediately prior to shipment, and no evidence of WNV transmission has been detected;

AND

- 6) were protected from mosquito attacks during transportation to the *place of shipment*.

Article 8.16.8.

Recommendations for the importation from WNF infected countries or zones

For birds other than poultry

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

- 1) the birds showed no clinical sign of WNF on the day of shipment; and
- 2) the birds were kept in a *quarantine station* in a mosquito-free environment for 30 days prior to shipment and a statistically valid sample was subjected, with negative results, to an agent identification test according to the *Terrestrial Manual* at least 3 days after the commencement of the residence period.

Article 8.16.9.

Protecting animals from mosquito attacks

When transporting *animals* through WNF infected countries or *infected zones*, *Veterinary Authorities* should require strategies to protect susceptible *animals* from mosquito attacks during transport, taking into account the local ecology of the mosquitoes.

Potential *risk management* strategies include:

- 1) treating *animals* with insect repellents prior to and during transportation;
 - 2) ensuring *vehicles* do not stop en route unless the *animals* are held behind insect proof netting;
 - 3) *surveillance* for *vectors* at common stopping and offloading points to gain information on seasonal variations;
 - 4) integrated pest management practices at holding, common stopping and offloading points;
 - 5) using historical, ongoing and/or WNF modelling information to identify low risk ports and transport routes.
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SECTION 9.

APIDAE

CHAPTER 9.1.

ACARAPISOSIS OF HONEY BEES

Article 9.1.1.

General provisions

For the purposes of this chapter, acarapisosis, acarine disease or tracheal mite *infestation* is a *disease* of the adult honey bee *Apis mellifera* L., and possibly of other *Apis* species (such as *Apis cerana*). It is caused by the Tarsonemid mite *Acarapis woodi* (Rennie). The mite is an internal obligate parasite of the respiratory system, living and reproducing mainly in the large prothoracic trachea of the bee. Early signs of *infection* normally go unnoticed, and only when *infection* is heavy does it become apparent; this is generally in the early spring. The *infection* spreads by direct contact from adult bee to adult bee, with newly emerged bees under ten days old being the most susceptible. The mortality rate may range from moderate to high.

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

Article 9.1.2.

Trade in commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any acarapisosis related conditions, regardless of the acarapisosis status of the honey bee population of the *exporting country or zone*:

- 1) honey bee semen and honey bee venom;
- 2) used equipment associated with beekeeping;
- 3) honey, beeswax, honey bee-collected pollen, propolis and royal jelly.

When authorising import or transit of other *commodities* listed in the chapter, *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the acarapisosis status of the honey bee population of the *exporting country or zone*.

Article 9.1.3.

Determination of the acarapisosis status of a country or zone/compartiment

The acarapisosis status of a country or *zone/compartiment* (under study) can only be determined after considering the following criteria:

- 1) a *risk assessment* has been conducted, identifying all potential factors for acarapisosis occurrence and their historic perspective;

- 2) acarapisosis should be notifiable in the whole country or *zone/compartment* (under study) and all clinical signs suggestive of acarapisosis should be subjected to field and *laboratory* investigations;
- 3) an on-going awareness programme should be in place to encourage reporting of all cases suggestive of acarapisosis;
- 4) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of *diseases* of honey bees should have current knowledge of, and authority over, all domesticated *apiaries* in the whole country.

Article 9.1.4.

Country or zone/compartment (under study) free from acarapisosis

1) Historically free status

A country or *zone /compartment* (under study) may be considered free from acarapisosis after conducting a *risk assessment* as referred to in Article 9.1.3. but without formally applying a specific *surveillance* programme if the country or *zone/compartment* (under study) complies with the provisions of Chapter 1.4.

2) Free status as a result of an eradication programme

A country or *zone/compartment* (under study) which does not meet the conditions of point 1 above may be considered free from acarapisosis after conducting a *risk assessment* as referred to in Article 9.1.3. and when:

- a) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of *diseases* of honey bees has current knowledge of, and authority over, all domesticated *apiaries* existing in the country or *zone/compartment* (under study);
- b) acarapisosis is notifiable in the whole country or *zone/compartment* (under study), and any clinical cases suggestive of acarapisosis are subjected to field and *laboratory* investigations;
- c) for the three years following the last reported case of acarapisosis, annual surveys supervised by the *Veterinary Authority*, with negative results, have been carried out on a representative sample of *apiaries* in the country or *zone/compartment* (under study) to provide a confidence level of at least 95 percent of detecting acarapisosis if at least 1 percent of the *apiaries* were infected at a within-*apiary* prevalence rate of at least 5 percent of the *hives*; such surveys may be targeted towards *apiaries*, areas and seasons with a higher likelihood of *disease*;
- d) to maintain free status, an annual survey supervised by the *Veterinary Authority*, with negative results, is carried out on a representative sample of *apiaries* in the country or *zone/compartment* (under study) to indicate that there has been no new cases; such a survey may be targeted towards areas with a higher likelihood of *disease*;
- e) (under study) there is no self-sustaining feral population of *A. mellifera* or other possible host species in the country or *zone/compartment* (under study);
- f) the importation of the *commodities* listed in the chapter into the country or *zone/compartment* (under study) is carried out in conformity with the recommendations of this chapter.

Article 9.1.5.

Recommendations for the importation of live queen honey bees, worker bees and drones with or without associated brood combs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the bees come from a country or *zone/compartment* (under study) free from acarapisosis.

Article 9.1.6.

Recommendations for the importation of eggs, larvae and pupae of honey bees

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

- 1) were sourced from an officially free country or *zone/compartment* (under study); or
 - 2) were examined by an official *laboratory* and declared free of all life stages of *A. woodi*; or
 - 3) have originated from queens in a *quarantine station* and were examined microscopically and found free of all life stages of *A. woodi*.
-

CHAPTER 9.2.

AMERICAN FOULBROOD OF HONEY BEES

Article 9.2.1.

General provisions

For the purposes of this chapter, American foulbrood is a *disease* of the larval and pupal stages of the honey bee *Apis mellifera* and other *Apis* spp., and occurs in most countries where such bees are kept. *Paenibacillus larvae*, the causative organism, is a bacterium that can produce over one billion spores in each infected larva. The spores are very long-living and extremely resistant to heat and chemical agents, and only the spores are capable of inducing the *disease*.

Combs of infected *apiaries* may show distinctive clinical signs which can allow the *disease* to be diagnosed in the field. However, subclinical *infections* are common and require *laboratory* diagnosis.

For the purposes of the *Terrestrial Code*, the *incubation period* for American foulbrood shall be 15 days (not including the wintering period which may vary according to country).

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

Article 9.2.2.

Trade in commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any American foulbrood related conditions, regardless of the American foulbrood status of the honey bee population of the *exporting country or zone*:

- 1) honey bee semen;
- 2) honey bee venom.

When authorising import or transit of other *commodities* listed in the chapter, *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the American foulbrood status of the honey bee population of the *exporting country or zone*.

Article 9.2.3.

Determination of the American foulbrood status of a country or zone/compartiment

The American foulbrood status of a country or *zone/compartiment* (under study) can only be determined after considering the following criteria:

- 1) a *risk assessment* has been conducted, identifying all potential factors for American foulbrood occurrence and their historic perspective;
- 2) American foulbrood should be notifiable in the whole country or *zone/compartiment* (under study) and all clinical signs suggestive of American foulbrood should be subjected to field and/or *laboratory* investigations;
- 3) an on-going awareness programme should be in place to encourage reporting of all cases suggestive of American foulbrood;
- 4) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of *diseases* of honey bees should have current knowledge of, and authority over, all domesticated *apiaries* in the country.

Article 9.2.4.

Country or zone/compartment (under study) free from American foulbrood1) Historically free status

A country or *zone/compartment* (under study) may be considered free from the *disease* after conducting a *risk assessment* as referred to in Article 9.2.3. but without formally applying a specific *surveillance* programme if the country or *zone/compartment* (under study) complies with the provisions of Chapter 1.4.

2) Free status as a result of an eradication programme

A country or *zone/compartment* (under study) which does not meet the conditions of point 1 above may be considered free from American foulbrood after conducting a *risk assessment* as referred to in Article 9.2.3. and when:

- a) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of *diseases* of honey bees has current knowledge of, and authority over, all domesticated *apiaries* existing in the country or *zone/compartment* (under study);
- b) American foulbrood is notifiable in the whole country or *zone /compartment* (under study), and any clinical cases suggestive of American foulbrood are subjected to field and/or *laboratory* investigations;
- c) for the five years following the last reported isolation of the American foulbrood agent, annual surveys supervised by the *Veterinary Authority*, with negative results, have been carried out on a representative sample of *apiaries* in the country or *zone/compartment* (under study) to provide a confidence level of at least 95 percent of detecting American foulbrood if at least 1 percent of the *apiaries* were infected at a within-*apiary* prevalence rate of at least 5 percent of the *hives*; such surveys may be targeted towards areas with the last reported isolation of the American foulbrood agent;
- d) to maintain free status, an annual survey supervised by the *Veterinary Authority*, with negative results, is carried out on a representative sample of *hives* in the country or *zone/compartment* (under study) to indicate that there has been no new isolations; such a survey may be targeted towards areas with a higher likelihood of isolation;
- e) (under study) there is no self-sustaining feral population of *A. mellifera* or other possible host species in the country or *zone/compartment* (under study);
- f) all equipment associated with previously infected *apiaries* has been sterilised or destroyed;
- g) the importation of the *commodities* listed in the chapter into the country or *zone/compartment* (under study) is carried out in conformity with the recommendations of this chapter.

Article 9.2.5.

Recommendations for the importation of live queen honey bees, worker bees and drones with or without associated brood combs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the bees come from a country or *zone/compartment* (under study) officially free from American foulbrood.

Article 9.2.6.

Recommendations for the importation of eggs, larvae and pupae of honey bees

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

- 1) were sourced from a free country or *zone/compartment* (under study); or

- 2) have been isolated from queens in a *quarantine station*, and all workers which accompanied the queen or a representative sample of eggs or larvae were examined for the presence of *P. larvae* by bacterial culture or PCR in accordance with the *Terrestrial Manual*.

Article 9.2.7.

Recommendations for the importation of used equipment associated with beekeeping

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the equipment was sterilised under the supervision of the *Veterinary Authority* by either immersion in 1 percent sodium hypochlorite for at least 30 minutes (suitable only for non-porous materials such as plastic and metal), gamma irradiation using a cobalt-60 source at a dose rate of 10 kiloGray, or processing to ensure the destruction of both bacillary and spore forms of *P. larvae*, in conformity with one of the procedures referred to in Chapter X.X. (under study).

Article 9.2.8.

Recommendations for the importation of honey, honey bee-collected pollen, beeswax, propolis and royal jelly

Veterinary Authorities of importing countries officially free from American foulbrood should require the presentation of an *international veterinary certificate* attesting that the products:

- 1) were collected in a country or *zone/compartment* (under study) free from American foulbrood; or
- 2) have been processed to ensure the destruction of both bacillary and spore forms of *P. larvae*, in conformity with one of the procedures referred to in Chapter X.X. (under study).

CHAPTER 9.3.

EUROPEAN FOULBROOD OF HONEY BEES

Article 9.3.1.

General provisions

For the purposes of this chapter, European foulbrood is a *disease* of the larval and pupal stages of the honey bee *Apis mellifera* and other *Apis* spp., and occurs in most countries where such bees are kept. The causative agent is the non-sporulating bacterium *Melissococcus plutonius*. Subclinical *infections* are common and require *laboratory* diagnosis. *Infection* remains enzootic because of mechanical contamination of the honeycombs. Recurrences of *disease* can therefore be expected in subsequent years.

For the purposes of the *Terrestrial Code*, the *incubation period* for European foulbrood shall be 15 days (not including the wintering period which may vary according to country).

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

Article 9.3.2.

Trade in commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any European foulbrood related conditions, regardless of the European foulbrood status of the honey bee population of the *exporting country or zone*:

- 1) honey bee semen;
- 2) honey bee venom.

When authorising import or transit of other *commodities* listed in the chapter, *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the European foulbrood status of the honey bee population of the *exporting country or zone*.

Article 9.3.3.

Determination of the European foulbrood status of a country or zone/compartment

The European foulbrood status of a country or *zone/compartment* (under study) can only be determined after considering the following criteria:

- 1) a *risk assessment* has been conducted, identifying all potential factors for European foulbrood occurrence and their historic perspective;
- 2) European foulbrood should be notifiable in the whole country or *zone/compartment* (under study) and all clinical signs suggestive of European foulbrood should be subjected to field and *laboratory* investigations;
- 3) an on-going awareness programme should be in place to encourage reporting of all cases suggestive of European foulbrood;
- 4) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of *diseases* of honey bees should have current knowledge of, and authority over, all *apiaries* in the whole country.

Article 9.3.4.

Country or zone/compartiment (under study) free from European foulbrood1) Historically free status

A country or *zone /compartiment* (under study) may be considered free from the *disease* after conducting a *risk assessment* as referred to in Article 9.3.3. but without formally applying a specific *surveillance* programme if the country or *zone/compartiment* (under study) complies with the provisions of Chapter 1.4.

2) Free status as a result of an eradication programme

A country or *zone/compartiment* (under study) which does not meet the conditions of point 1 above may be considered free from European foulbrood after conducting a *risk assessment* as referred to in Article 9.3.3. and when:

- a) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of *diseases* of honey bees has current knowledge of, and authority over, all domesticated *apiaries* existing in the country or *zone/compartiment* (under study);
- b) European foulbrood is notifiable in the whole country or *zone/compartiment* (under study), and any clinical cases suggestive of European foulbrood are subjected to field and *laboratory* investigations;
- c) for the three years following the last reported isolation of the European foulbrood agent, an annual survey supervised by the *Veterinary Authority*, with negative results, have been carried out on a representative sample of *apiaries* in the country or *zone/compartiment* (under study) to provide a confidence level of at least 95 percent of detecting European foulbrood if at least 1 percent of the *apiaries* were infected at a within-*apiary* prevalence rate of at least 5 percent of the *hives*; such a survey may be targeted towards areas with the last reported isolation of the European foulbrood agent;
- d) to maintain free status, an annual survey supervised by the *Veterinary Authority*, with negative results, is carried out on a representative sample of *hives* in the country or *zone/compartiment* (under study) to indicate that there has been no new isolations; such a survey may be targeted towards areas with a higher likelihood of isolation;
- e) (under study) there is no self-sustaining feral population of *A. mellifera* or other possible host species in the country or *zone/compartiment* (under study);
- f) the importation of the *commodities* listed in the chapter into the country or *zone/compartiment* (under study) is carried out in conformity with the recommendations of this chapter.

Article 9.3.5.

Recommendations for the importation of live queen honey bees, worker bees and drones with or without associated brood combs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the bees come from a country or *zone/compartiment* (under study) free from European foulbrood.

Article 9.3.6.

Recommendations for the importation of eggs, larvae and pupae of honey bees

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

- 1) were sourced from a free country or *zone/compartiment* (under study); or

- 2) have been isolated from queens in a *quarantine station*, and all workers which accompanied the queen or a representative sample of eggs or larvae were examined for the presence of *M. plutonius* by bacterial culture or PCR in accordance with the *Terrestrial Manual*.

Article 9.3.7.

Recommendations for the importation of used equipment associated with beekeeping

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the equipment was sterilised under the supervision of the *Veterinary Authority* by either immersion in 0.5 percent sodium hypochlorite for at least 20 minutes (suitable only for non-porous materials such as plastic and metal), gamma irradiation using a cobalt-60 source at a dose rate of 10 kiloGray, or processing to ensure the destruction of *M. plutonius*, in conformity with one of the procedures referred to in Chapter X.X. (under study).

Article 9.3.8.

Recommendations for the importation of honey, honey bee-collected pollen, beeswax, propolis and royal jelly

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

- 1) were collected in a country or *zone/compartment* (under study) free from European foulbrood; or
- 2) have been processed to ensure the destruction of *M. plutonius*, in conformity with one of the procedures referred to in Chapter X.X. (under study).

CHAPTER 9.4.

SMALL HIVE BEETLE INFESTATION (*AETHINA TUMIDA*)

Article 9.4.1.

General provisions

For the purposes of this chapter, small hive beetle (SHB) is an *infestation* of bee colonies by the beetle *Aethina tumida*, which is a free-living predator and scavenger affecting populations of the honey bee *Apis mellifera* L. It can also parasitise bumble bee *Bombus terrestris* colonies under experimental conditions, and although *infestation* has not been demonstrated in wild populations, *Bombus* spp. should also be considered to be susceptible to *infestation*.

The adult beetle is attracted to bee colonies to reproduce, although it can survive and reproduce independently in other natural environments, using other food sources, including certain types of fruit. Hence once it is established within a localised environment, it is extremely difficult to eradicate.

The life cycle of *A. tumida* begins with the adult beetle laying eggs within infested *hives*. These are usually laid in irregular masses in crevices or brood combs. After two to six days, the eggs hatch and the emerging larvae begin to feed voraciously on brood comb, bee eggs, pollen and honey within the hive. The SHB has a high reproductive potential. Each female can produce about 1,000 eggs in its four to six months of life. At maturation (approximately 10–29 days after hatching), the larvae exit the hive and burrow into soil around the hive entrance. Adult beetles emerge after an average of three–four weeks, although pupation can take between 8 and 60 days depending on temperature and moisture levels.

The life span of an adult beetle depends on environmental conditions such as temperature and humidity but, in practice, adult beetles can live for at least six months and, in favourable reproductive conditions, the female is capable of laying new egg batches every 5–12 weeks. The beetle is able to survive at least two weeks without food and 50 days on brood combs.

Early signs of *infestation* may go unnoticed, but the growth of the beetle population is rapid, leading to high bee mortality in the *hive*. Because *A. tumida* can be found and can thrive within the natural environment, and can fly up to 6–13 km from its nest site, it is capable of dispersing rapidly and directly colonising *hives*. Dispersal includes following or accompanying swarms. Spread of *infestation* does not require contact between adult bees. However, the movement of adult bees, honeycomb and other apiculture products and used equipment associated with bee-keeping may all cause *infestations* to spread to previously unaffected colonies.

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

Article 9.4.2.

Trade in commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any small hive beetle *infestation* related conditions, regardless of the *A. tumida* status of the honey bee and bumble bee population of the *exporting country or zone*:

- 1) honey bee semen and honey bee venom;
- 2) packaged extracted honey, refined or rendered beeswax, propolis and frozen or dried royal jelly.

When authorising import or transit of other *commodities* listed in the chapter, *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the *A. tumida* status of the honey bee and bumble bee population of the *exporting country or zone*.

Article 9.4.3.

Determination of the *A. tumida* status of a country or zone/compartiment

The *A. tumida* status of a country or zone can only be determined after considering the following criteria:

- 1) *A. tumida infestation* should be notifiable in the whole country, and all signs suggestive of *A. tumida infestation* should be subjected to field and *laboratory* investigations;
- 2) on-going awareness and training programmes should be in place to encourage reporting of all cases suggestive of *A. tumida infestation*;
- 3) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of *diseases* of honey bees should have current knowledge of, and authority over, all domesticated *apiaries* in the country.

Article 9.4.4.

Country or zone free from *A. tumida*1) Historically free status

A country or zone may be considered free from *A. tumida infestation* after conducting a *risk assessment* as referred to in Article 9.4.3. but without formally applying a specific *surveillance* programme if the country or zone complies with the provisions of Chapter 1.4.

2) Free status as a result of an eradication programme

A country or zone which does not meet the conditions of point 1 above may be considered free from *A. tumida infestation* after conducting a *risk assessment* as referred to in Article 9.4.3. and when:

- a) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of *diseases* of honey bees has current knowledge of, and authority over, all domesticated *apiaries* existing in the country or zone;
- b) *A. tumida infestation* is notifiable in the whole country or zone, and any clinical cases suggestive of *A. tumida infestation* are subjected to field and *laboratory* investigations; a contingency plan is in place describing controls and inspection activities;
- c) for the five years following the last reported case of *A. tumida infestation*, an annual survey supervised by the *Veterinary Authority*, with negative results, has been carried out on a representative sample of *apiaries* in the country or zone to provide a confidence level of at least 95 percent of detecting *A. tumida infestation* if at least 1 percent of the *apiaries* were infested at a within-*apiary* prevalence rate of at least 5 percent of the *hives*; such surveys may be targeted towards areas with a higher likelihood of *infestation*;
- d) to maintain free status, an annual survey supervised by the *Veterinary Authority*, with negative results, is carried out on a representative sample of *apiaries* to indicate that there have been no new cases; such a survey may be targeted towards areas with a higher likelihood of *infestation*;
- e) all equipment associated with previously infested *apiaries* has been destroyed, or cleaned and sterilised to ensure the destruction of *A. tumida* spp., in conformity with one of the procedures referred to in Chapter X.X. (under study);
- f) the soil and undergrowth in the immediate vicinity of all infested *apiaries* has been treated with a soil drench or similar suitable treatment that is efficacious in destroying incubating *A. tumida* larvae and pupae;
- g) the importation of the *commodities* listed in the chapter into the country or zone is carried out, in conformity with the recommendations of this chapter.

Article 9.4.5.

Recommendations for the importation of individual consignments containing a single live queen honey bee or queen bumble bee, accompanied by a small number of associated attendants (a maximum of 20 attendants per queen)

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the bees come from a country or zone officially free from *A. tumida* infestation.

OR

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* including an attestation from the *Veterinary Authority* of the exporting third country stating that:

- 1) the bees come from *hives* or colonies which were inspected immediately prior to dispatch and show no sign or suspicion of the presence of *A. tumida* or its eggs, larvae or pupae; and
- 2) the bees come from an area of at least 100 km radius where no *apiary* has been subject to any restrictions associated with the occurrence of *A. tumida* for the previous six months; and
- 3) the bees and accompanying packaging presented for export have been thoroughly and individually inspected and do not contain *A. tumida* or its eggs, larvae or pupae; and
- 4) the consignment of bees is covered with fine mesh through which a live beetle cannot enter.

Article 9.4.6.

Recommendations for the importation of live worker bees, drone bees or bee colonies with or without associated brood combs or for live bumble bees

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

- 1) the bees come from a country or zone officially free from *A. tumida* infestation; and
- 2) the bees and accompanying packaging presented for export have been inspected and do not contain *A. tumida* or its eggs, larvae or pupae; and
- 3) the consignment of bees is covered with fine mesh through which a live beetle cannot enter.

Article 9.4.7.

Recommendations for the importation of eggs, larvae and pupae of honey bees or bumble bees

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

- 1) the products were sourced from a country or zone free from *A. tumida* infestation;

OR

- 2) the products have been bred and kept under a controlled environment within a recognised establishment which is supervised and controlled by the *Veterinary Authority*;
- 3) the establishment was inspected immediately prior to dispatch and all eggs, larvae and pupae show no clinical sign or suspicion of the presence of *A. tumida* or its eggs or larvae or pupae, and
- 4) the packaging material, containers, accompanying products and food are new and all precautions have been taken to prevent contamination with *A. tumida* or its eggs, larvae or pupae.

Article 9.4.8.

Recommendations for the importation of used equipment associated with beekeeping

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

1) the equipment:

EITHER

- a) comes from a country or *zone* free from *A. tumida infestation*; and
- b) contains no live honey bees or bee brood;

OR

- c) contains no live honey bees or bee brood; and
- d) has been thoroughly cleaned, and treated to ensure the destruction of *A. tumida* spp., in conformity with one of the procedures referred to in Chapter X.X. (under study);

AND

2) all precautions have been taken to prevent *infestation/contamination*.

Article 9.4.9.

Recommendations for the importation of honey-bee collected pollen and beeswax (in the form of honeycomb)

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

1) the products:

EITHER

- a) comes from a country or *zone* free from *A. tumida infestation*; and
- b) contains no live honey bees or bee brood;

OR

- c) contains no live honey bees or bee brood; and
- d) has been thoroughly cleaned, and treated to ensure the destruction of *A. tumida* spp., in conformity with one of the procedures referred to in Chapter X.X. (under study);

AND

2) all precautions have been taken to prevent *infestation/contamination*.

Article 9.4.10.

Recommendations for the importation of comb honey

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

- 1) comes from a country or *zone* free from *A. tumida infestation*; and
- 2) contains no live honey bees or bee brood;

OR

- 3) were subjected to a treatment at a temperature of -12°C or lower in the core of the product during at least 24 hours.
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CHAPTER 9.5.

TROPILAEELAPS INFESTATION OF HONEY BEES

Article 9.5.1.

General provisions

For the purposes of this chapter, *Tropilaelaps infestation* of the honey bee *Apis mellifera* L. is caused by the mites *Tropilaelaps clareae*, *T. koenigerum*, *T. thaii* and *T. mercedesae*. The mite is an ectoparasite of brood of *Apis mellifera* L., *Apis laboriosa* and *Apis dorsata*, and cannot survive for periods of more than seven days away from bee brood.

Early signs of *infection* normally go unnoticed, but the growth in the mite population is rapid leading to high hive mortality. The *infection* spreads by direct contact from adult bee to adult bee, and by the movement of infested bees and bee brood. The mite can also act as a *vector* for viruses of the honey bee.

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

Article 9.5.2.

Trade in commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any *Tropilaelaps* infestation related conditions, regardless of the *Tropilaelaps* status of the honey bee population of the *exporting country* or *zone*:

- 1) honey bee semen, honey bee eggs and honey bee venom;
- 2) extracted honey and beeswax (not in the form of honeycomb).

When authorising import or transit of other *commodities* listed in the chapter, *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the *Tropilaelaps* status of the honey bee population of the *exporting country* or *zone*.

Article 9.5.3.

Determination of the *Tropilaelaps* status of a country or zone/compartment

The *Tropilaelaps* status of a country or *zone/compartment* (under study) can only be determined after considering the following criteria:

- 1) a *risk assessment* has been conducted, identifying all potential factors for *Tropilaelaps* occurrence and their historic perspective;
- 2) *Tropilaelaps* infestation should be notifiable in the whole country or *zone/compartment* (under study) and all clinical signs suggestive of *Tropilaelaps* infestation should be subjected to field and *laboratory* investigations;
- 3) an on-going awareness programme should be in place to encourage reporting of all cases suggestive of *Tropilaelaps* infestation;

- 4) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of *diseases* of honey bees should have current knowledge of, and authority over, all domesticated *apiaries* in the country.

Article 9.5.4.

Country or zone/compartiment (under study) free from *Tropilaelaps* spp

1) Historically free status

A country or *zone/compartiment* (under study) may be considered free from the *disease* after conducting a *risk assessment* as referred to in Article 9.5.3. but without formally applying a specific *surveillance* programme if the country or *zone/compartiment* (under study) complies with the provisions of Chapter 1.4.

2) Free status as a result of an eradication programme

A country or *zone/compartiment* (under study) which does not meet the conditions of point 1 above may be considered free from *Tropilaelaps* infestation after conducting a *risk assessment* as referred to in Article 9.5.3. and when:

- a) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of *diseases* of honey bees has current knowledge of, and authority over, all domesticated *apiaries* existing in the country or *zone/compartiment* (under study);
- b) *Tropilaelaps* infestation is notifiable in the whole country or *zone/compartiment* (under study), and any clinical cases suggestive of *Tropilaelaps* infestation are subjected to field and *laboratory* investigations;
- c) for the three years following the last reported case of *Tropilaelaps* infestation, an annual survey supervised by the *Veterinary Authority*, with negative results, have been carried out on a representative sample of *apiaries* in the country or *zone/compartiment* (under study) to provide a confidence level of at least 95 percent of detecting *Tropilaelaps* infestation if at least 1 percent of the *apiaries* were infected at a within-*apiary* prevalence rate of at least 5 percent of the *hives*; such surveys may be targeted towards areas with a higher likelihood of *infestation*;
- d) to maintain free status, an annual survey supervised by the *Veterinary Authority*, with negative results, is carried out on a representative sample of *apiaries* in the country or *zone/compartiment* (under study) to indicate that there has been no new cases; such a survey may be targeted towards areas with a higher likelihood of *disease*;
- e) (under study) there is no self-sustaining feral population of *A. mellifera*, *A. dorsata* or *A. laboriosa*, or other possible host species in the country or *zone/compartiment* (under study);
- f) the importation of the *commodities* listed in the chapter into the country or *zone/compartiment* (under study) is carried out, in conformity with the recommendations of this chapter.

Article 9.5.5.

Recommendations for the importation of live queen honey bees, worker bees and drones with associated brood combs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the bees come from a country or *zone/compartiment* (under study) officially free from *Tropilaelaps* infestation.

Article 9.5.6.

Recommendations for the importation of live queen honey bees, worker bees and drones without associated brood combs

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the bees have been held in isolation from brood and bees with access to brood, for a period of at least seven days.

Article 9.5.7.

Recommendations for the importation of used equipment associated with beekeeping

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

- 1) comes from a country or *zone/compartment* (under study) free from *Tropilaelaps* infestation; or
- 2) contains no live honey bees or bee brood and has been held away from contact with live honey bees for at least seven days prior to shipment; or
- 3) has been treated to ensure the destruction of *Tropilaelaps* spp., in conformity with one of the procedures referred to in Chapter X.X. (under study).

Article 9.5.8.

Recommendations for the importation of honey-bee collected pollen, beeswax (in the form of honeycomb), comb honey and propolis

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

- 1) come from a country or *zone/compartment* (under study) free from *Tropilaelaps* infestation; or
 - 2) contain no live honey bees or bee brood and has been held away from contact with live honey bees for at least seven days prior to shipment; or
 - 3) have been treated to ensure the destruction of *Tropilaelaps* spp., in conformity with one of the procedures referred to in Chapter X.X. (under study).
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CHAPTER 9.6.

VARROOSIS OF HONEY BEES

Article 9.6.1.

General provisions

For the purposes of this chapter, varroosis is a *disease* of the honey bee *Apis mellifera* L. It is caused by the Korea and Japan haplotypes of the mite *Varroa destructor*, the original hosts of which are the Korea and Japan haplotypes of *Apis cerana* (under study). The mite is an ectoparasite of adults and brood of *Apis mellifera* L. During its life cycle, sexual reproduction occurs inside the honey bee brood cells. Early signs of *infection* normally go unnoticed, and only when *infection* is heavy does it become apparent. The *infection* spreads by direct contact from adult bee to adult bee, and by the movement of infested bees and bee brood. The mite can also act as a *vector* for viruses of the honey bee.

The number of parasites steadily increases with increasing brood activity and the growth of the bee population, especially late in the season when clinical signs of *infestation* can first be recognised. The life span of an individual mite depends on temperature and humidity but, in practice, it can be said to last from some days to a few months.

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

Article 9.6.2.

Trade in commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any varroosis related conditions, regardless of the varroosis status of the honey bee population of the *exporting country or zone*:

- 1) honey bee semen, honey bee eggs and honey bee venom;
- 2) extracted honey and beeswax (not in the form of honeycomb).

When authorising import or transit of other *commodities* listed in the chapter, *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the varroosis status of the honey bee population of the *exporting country or zone*.

Article 9.6.3.

Determination of the varroosis status of a country or zone/compartment

The varroosis status of a country or *zone/compartment* (under study) can only be determined after considering the following criteria:

- 1) a *risk assessment* has been conducted, identifying all potential factors for varroosis occurrence and their historic perspective;
- 2) varroosis should be notifiable in the whole country or *zone/compartment* (under study) and all clinical signs suggestive of varroosis should be subjected to field and *laboratory* investigations;
- 3) an on-going awareness programme should be in place to encourage reporting of all cases suggestive of varroosis;
- 4) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of *diseases* of honey bees should have current knowledge of, and authority over, all domesticated *apiaries* in the country.

Article 9.6.4.

Country or zone/compartiment (under study) free from varroosis1) Historically free status

A country or *zone/compartiment* (under study) may be considered free from the *disease* after conducting a *risk assessment* as referred to in Article 9.6.3. but without formally applying a specific *surveillance* programme (historical freedom) if the country or *zone/compartiment* (under study) complies with the provisions of Chapter 1.4.

2) Free status as a result of an eradication programme

A country or *zone/compartiment* (under study) which does not meet the conditions of point 1 above may be considered free from varroosis after conducting a *risk assessment* as referred to in Article 9.6.3. and when:

- a) the *Veterinary Authority* or other *Competent Authority* with responsibility for reporting and control of *diseases* of honey bees has current knowledge of, and authority over, all domesticated *apiaries* existing in the country or *zone/compartiment* (under study);
- b) varroosis is notifiable in the whole country or *zone/compartiment* (under study), and any clinical cases suggestive of varroosis are subjected to field and *laboratory* investigations;
- c) for the three years following the last reported case of varroosis, an annual survey supervised by the *Veterinary Authority*, with negative results, have been carried out on a representative sample of *apiaries* in the country or *zone/compartiment* (under study) to provide a confidence level of at least 95 percent of detecting varroosis if at least 1 percent of the *apiaries* were infected at a within-*apiary* prevalence rate of at least 5 percent of the *hives*; such a survey may be targeted towards areas with a higher likelihood of *disease*;
- d) to maintain free status, an annual survey supervised by the *Veterinary Authority*, with negative results, is carried out on a representative sample of *apiaries* in the country or *zone/compartiment* (under study) to indicate that there has been no new cases; such a survey may be targeted towards areas with a higher likelihood of *disease*;
- e) (under study) there is no self-sustaining feral population of *A. mellifera*, the Korea and Japan haplotypes of *Apis cerana* or other possible host species in the country or *zone/compartiment* (under study);
- f) the importation of the *commodities* listed in the chapter into the country or *zone/compartiment* (under study) is carried out in conformity with the recommendations of this chapter.

Article 9.6.5.

Recommendations for the importation of live queen honey bees, worker bees and drones with or without associated brood combs

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the bees come from a country or *zone/compartiment* (under study) officially free from varroosis.

Article 9.6.6.

Recommendations for the importation of larvae and pupae of honey bees

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

- 1) were sourced from a free country or *zone/compartiment* (under study); or
- 2) have originated from queens in a *quarantine station* and were inspected and found free of *Varroa destructor*.

Article 9.6.7.

Recommendations for the importation of used equipment associated with beekeeping

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

- 1) comes from a country or *zone/compartment* (under study) free from varroosis; or
- 2) contains no live honey bees or bee brood and has been held away from contact with live honey bees for at least seven days prior to shipment; or
- 3) has been treated to ensure the destruction of *Varroa destructor*, in conformity with one of the procedures referred to in Chapter X.X. (under study).

Article 9.6.8.

Recommendations for the importation of honey-bee collected pollen, beeswax (in the form of honeycomb), comb honey and propolis

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

- 1) come from a country or *zone/compartment* (under study) free from varroosis; or
 - 2) contain no live honey bees or bee brood and has been held away from contact with live honey bees for at least seven days prior to shipment; or
 - 3) have been treated to ensure the destruction of *Varroa destructor*, in conformity with one of the procedures referred to in Chapter X.X. (under study).
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SECTION 10.

AVES

CHAPTER 10.1.

AVIAN CHLAMYDIOSIS

Article 10.1.1.

General provisions

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

Article 10.1.2.

Trade in commodities

Veterinary Authorities of countries free from avian chlamydiosis may prohibit importation or transit through their territory, from countries considered infected with avian chlamydiosis, of birds of the *Psittacidae* family.

Article 10.1.3.

Recommendations for the importation of birds of the Psittacidae family

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

- 1) showed no clinical sign of avian chlamydiosis on the day of shipment;
 - 2) were kept under veterinary supervision for the 45 days prior to shipment and were treated against avian chlamydiosis using chlortetracycline.
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CHAPTER 10.2.

AVIAN INFECTIOUS BRONCHITIS

Article 10.2.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for avian infectious bronchitis shall be 50 days.

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

Article 10.2.2.

Recommendations for the importation of chickens

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

- 1) showed no clinical sign of avian infectious bronchitis on the day of shipment;
- 2) come from *establishments* which are recognised as being free from avian infectious bronchitis, based on the results of serological tests;
- 3) have not been vaccinated against avian infectious bronchitis; or
- 4) were vaccinated against avian infectious bronchitis (the nature of the vaccine used and the date of *vaccination* should also be stated in the *certificate*).

Article 10.2.3.

Recommendations for the importation of day-old birds

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

- 1) come from *establishments* which are regularly inspected by the *Veterinary Authority* and from hatcheries which comply with the standards referred to in Chapter 6.4.;
- 2) have not been vaccinated against avian infectious bronchitis; or
- 3) were vaccinated against avian infectious bronchitis (the nature of the vaccine used and the date of *vaccination* shall also be stated in the *certificate*);
- 4) are the progeny of parent *flocks* which:
 - a) come from *establishments* and/or hatcheries which are recognised as being free from avian infectious bronchitis, based on the results of serological tests;
 - b) come from *establishments* in which *vaccination* against avian infectious bronchitis is not practised on the parent stock; or
 - c) come from *establishments* in which *vaccination* against avian infectious bronchitis is practised on the parent stock;
- 5) were shipped in clean and unused packages.

Article 10.2.4.

Recommendations for the importation of hatching eggs of chickens

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

- 1) have been disinfected in conformity with the standards referred to in Chapter 6.4.;
 - 2) come from *establishments* and/or hatcheries which are recognised as being free from avian infectious bronchitis and from hatcheries which comply with the standards referred to in Chapter 6.4.;
 - 3) were shipped in clean and unused packages.
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CHAPTER 10.3.

AVIAN INFECTIOUS LARYNGOTRACHEITIS

Article 10.3.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for avian infectious laryngotracheitis (ILT) shall be 14 days (chronic carriers occur).

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

Article 10.3.2.

Recommendations for the importation of chickens

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

- 1) showed no clinical sign of ILT on the day of shipment;
- 2) come from *establishments* which are recognised as being free from ILT, based on the results of serological tests;
- 3) have not been vaccinated against ILT; or
- 4) were vaccinated against ILT (the nature of the vaccine used and the date of *vaccination* should also be stated in the *certificate*).

Article 10.3.3.

Recommendations for the importation of day-old birds

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

- 1) come from *establishments* and/or hatcheries which are regularly inspected by the *Veterinary Authority* and from hatcheries which comply with the standards referred to in Chapter 6.4.;
- 2) have not been vaccinated against ILT; or
- 3) were vaccinated against ILT (the nature of the vaccine used and the date of *vaccination* should also be stated in the *certificate*);
- 4) are the progeny of parent *flocks* which:
 - a) come from *establishments* and/or hatcheries which are recognised as being free from ILT, based on the results of serological tests;
 - b) come from *establishments* in which *vaccination* against ILT is not practised on the parent stock; or
 - c) come from *establishments* in which *vaccination* against ILT is practised on the parent stock;
- 5) were shipped in clean and unused packages.

Article 10.3.4.

Recommendations for the importation of hatching eggs of chickens

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

- 1) have been disinfected in conformity with the standards referred to in Chapter 6.4.;
 - 2) come from *establishments* and/or hatcheries which are recognised as being free from ILT and from hatcheries which comply with the standards referred to in Chapter 6.4.;
 - 3) were shipped in clean and unused packages.
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CHAPTER 10.4.

INFECTION WITH VIRUSES OF NOTIFIABLE AVIAN INFLUENZA

Article 10.4.1.

General provisions

- 1) Highly pathogenic avian influenza in birds and low pathogenicity notifiable avian influenza in *poultry*, as defined below, should be notified in accordance with the *Terrestrial Code*.
- 2) For the purposes of the *Terrestrial Code*, notifiable avian influenza (NAI) is defined as an *infection of poultry* caused by any influenza A virus of the H5 or H7 subtypes or by any AI virus with an intravenous pathogenicity index (IVPI) greater than 1.2 (or as an alternative at least 75 percent mortality) as described below. NAI viruses can be divided into highly pathogenic notifiable avian influenza (HPNAI) and low pathogenicity notifiable avian influenza (LPNAI):
 - a) HPNAI viruses have an IVPI in six-week-old chickens greater than 1.2 or, as an alternative, cause at least 75 percent mortality in four-to eight-week-old chickens infected intravenously. H5 and H7 viruses which do not have an IVPI of greater than 1.2 or cause less than 75 percent mortality in an intravenous lethality test should be sequenced to determine whether multiple basic amino acids are present at the cleavage site of the haemagglutinin molecule (HA0); if the amino acid motif is similar to that observed for other HPNAI isolates, the isolate being tested should be considered as HPNAI;
 - b) LPNAI are all influenza A viruses of H5 and H7 subtype that are not HPNAI viruses.
- 3) *Poultry* is defined as 'all domesticated birds, including backyard *poultry*, used for the production of *meat* or eggs for consumption, for the production of other commercial products, for restocking supplies of game, or for breeding these categories of birds, as well as fighting cocks used for any purpose'.

Birds that are kept in captivity for any reason other than those reasons referred to in the preceding paragraph, including those that are kept for shows, races, exhibitions, competitions or for breeding or selling these categories of birds as well as pet birds, are not considered to be *poultry*.

- 4) For the purposes of the *Terrestrial Code*, the *incubation period* for NAI shall be 21 days.
- 5) This chapter deals not only with the occurrence of clinical signs caused by NAI virus, but also with the presence of *infection* with NAI virus in the absence of clinical signs.
- 6) Antibodies to H5 or H7 subtype of NAI virus, which have been detected in *poultry* and are not a consequence of *vaccination*, have to be immediately investigated. In the case of isolated serological positive results, NAI *infection* may be ruled out on the basis of a thorough epidemiological and laboratory investigation that does not demonstrate further evidence of NAI *infection*.
- 7) The following defines the occurrence of *infection* with NAI virus:
 - a) HPNAI virus has been isolated and identified as such or viral RNA specific for HPNAI has been detected in *poultry* or a product derived from *poultry*; or
 - b) LPNAI virus has been isolated and identified as such or viral RNA specific for LPNAI has been detected in *poultry* or a product derived from *poultry*.
- 8) For the purposes of the *Terrestrial Code*, 'NAI free establishment' means an *establishment* in which the *poultry* have shown no evidence of NAI *infection*, based on *surveillance* in accordance with Articles 10.4.27. to 10.4.33.
- 9) Standards for diagnostic tests, including pathogenicity testing, are described in the *Terrestrial Manual*. Any vaccine used should comply with the standards described in the *Terrestrial Manual*.

- 10) A Member should not impose immediate bans on the trade in *poultry commodities* in response to a notification, according to Article 1.1.3. of the *Terrestrial Code*, of *infection* with HPAI and LPAI virus in birds other than *poultry*, including wild birds.

Article 10.4.2.

Determination of the NAI status of a country, zone or compartment

The NAI status of a country, a *zone* or a *compartment* can be determined on the basis of the following criteria:

- 1) NAI is notifiable in the whole country, an on-going NAI awareness programme is in place, and all notified suspect occurrences of NAI are subjected to field and, where applicable, *laboratory* investigations;
- 2) appropriate *surveillance* is in place to demonstrate the presence of *infection* in the absence of clinical signs in *poultry*, and the risk posed by birds other than *poultry*; this may be achieved through a NAI *surveillance* programme in accordance with Articles 10.4.27. to 10.4.33.;
- 3) consideration of all epidemiological factors for NAI occurrence and their historical perspective.

Article 10.4.3.

NAI free country, zone or compartment

A country, *zone* or *compartment* may be considered free from NAI when it has been shown that neither HPNAI nor LPNAI *infection* in *poultry* has been present in the country, *zone* or *compartment* for the past 12 months, based on *surveillance* in accordance with Articles 10.4.27. to 10.4.33.

If *infection* has occurred in *poultry* in a previously free country, *zone* or *compartment*, NAI free status can be regained:

- 1) In the case of HPNAI *infections*, three months after a *stamping-out policy* (including *disinfection* of all affected *establishments*) is applied, providing that *surveillance* in accordance with Articles 10.4.27. to 10.4.33. has been carried out during that three-month period.
- 2) In the case of LPNAI *infections*, *poultry* may be kept for *slaughter* for human consumption subject to conditions specified in Article 10.4.19. or a *stamping-out policy* may be applied; in either case, three months after the *disinfection* of all affected *establishments*, providing that *surveillance* in accordance with Articles 10.4.27. to 10.4.33. has been carried out during that three-month period.

Article 10.4.4.

HPNAI free country, zone or compartment

A country, *zone* or *compartment* may be considered free from HPNAI when:

- 1) it has been shown that HPNAI *infection* in *poultry* has not been present in the country, *zone* or *compartment* for the past 12 months, although its LPNAI status may be unknown; or
- 2) when, based on *surveillance* in accordance with Articles 10.4.27. to 10.4.33., it does not meet the criteria for freedom from NAI but any NAI virus detected has not been identified as HPNAI virus.

The *surveillance* may need to be adapted to parts of the country or existing *zones* or *compartments* depending on historical or geographical factors, industry structure, population data, or proximity to recent *outbreaks*.

If *infection* has occurred in *poultry* in a previously free country, *zone* or *compartment*, HPNAI free status can be regained three months after a *stamping-out policy* (including *disinfection* of all affected *establishments*) is applied, providing that *surveillance* in accordance with Articles 10.4.27. to 10.4.33. has been carried out during that three-month period.

Article 10.4.5.

Recommendations for importation from a NAI free country, zone or compartment

For live poultry (other than day-old poultry)

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

- 1) the *poultry* showed no clinical sign of NAI on the day of shipment;
- 2) the *poultry* were kept in a NAI free country, *zone* or *compartment* since they were hatched or for at least the past 21 days;
- 3) the *poultry* are transported in new or appropriately sanitized *containers*;
- 4) if the *poultry* have been vaccinated against NAI, it has been done in accordance with the provisions of the *Terrestrial Manual* and the nature of the vaccine used and the date of *vaccination* have been attached to the *certificate*.

Article 10.4.6.

Recommendations for the importation of live birds other than poultry

Regardless of the NAI status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

- 1) on the day of shipment, the birds showed no clinical sign of *infection* with a virus which would be considered NAI in *poultry*;
- 2) the birds were kept in isolation approved by the *Veterinary Services* since they were hatched or for at least the 21 days prior to shipment and showed no clinical sign of *infection* with a virus which would be considered NAI in *poultry* during the isolation period;
- 3) a statistically valid sample of the birds, selected in accordance with the provisions of Article 10.4.29., was subjected to a diagnostic test within 14 days prior to shipment to demonstrate freedom from *infection* with a virus which would be considered NAI in *poultry*;
- 4) the birds are transported in new or appropriately sanitized *containers*;
- 5) if the birds have been vaccinated against NAI, it has been done in accordance with the provisions of the *Terrestrial Manual* and the nature of the vaccine used and the date of *vaccination* have been attached to the *certificate*.

Article 10.4.7.

Recommendations for importation from a NAI free country, zone or compartment

For day-old live poultry

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

- 1) the *poultry* were kept in a NAI free country, *zone* or *compartment* since they were hatched;
- 2) the *poultry* were derived from parent *flocks* which had been kept in a NAI free country, *zone* or *compartment* for at least 21 days prior to and at the time of the collection of the eggs;
- 3) the *poultry* are transported in new or appropriately sanitized *containers*;
- 4) if the *poultry* or the parent *flocks* have been vaccinated against NAI, it has been done in accordance with the provisions of the *Terrestrial Manual* and the nature of the vaccine used and the date of *vaccination* have been attached to the *certificate*.

Article 10.4.8.

Recommendations for importation from a HPNAI free country, zone or compartmentFor day-old live poultry

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

- 1) the *poultry* were kept in a HPNAI free country, *zone* or *compartment* since they were hatched;
- 2) the *poultry* were derived from parent *flocks* which had been kept in a NAI free *establishment* for at least 21 days prior to and at the time of the collection of the eggs;
- 3) the *poultry* are transported in new or appropriately sanitized *containers*;
- 4) if the *poultry* or the parent *flocks* have been vaccinated against NAI, it has been done in accordance with the provisions of the *Terrestrial Manual* and the nature of the vaccine used and the date of *vaccination* have been attached to the *certificate*.

Article 10.4.9.

Recommendations for the importation of day-old live birds other than poultry

Regardless of the NAI status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

- 1) on the day of shipment, the birds showed no clinical sign of *infection* with a virus which would be considered NAI in *poultry*;
- 2) the birds were hatched and kept in isolation approved by the *Veterinary Services*;
- 3) the parent *flock* birds were subjected to a diagnostic test at the time of the collection of the eggs to demonstrate freedom from *infection* with NAIV;
- 4) the birds are transported in new or appropriately sanitized *containers*;
- 5) if the birds or parent *flocks* have been vaccinated against NAI, it has been done in accordance with the provisions of the *Terrestrial Manual* and the nature of the vaccine used and the date of *vaccination* have been attached to the *certificate*.

Article 10.4.10.

Recommendations for importation from a NAI free country, zone or compartmentFor hatching eggs of poultry

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

- 1) the eggs came from a NAI free country, *zone* or *compartment*;
- 2) the eggs were derived from parent *flocks* which had been kept in a NAI free country, *zone* or *compartment* for at least 21 days prior to and at the time of the collection of the eggs;
- 3) the eggs are transported in new or appropriately sanitized packaging materials;
- 4) if the parent *flocks* have been vaccinated against NAI, it has been done in accordance with the provisions of the *Terrestrial Manual* and the nature of the vaccine used and the date of *vaccination* have been attached to the *certificate*.

Article 10.4.11.

Recommendations for importation from a HPNAI free country, zone or compartment

For hatching eggs of poultry

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

- 1) the eggs came from a HPNAI free country, *zone* or *compartment*;
- 2) the eggs were derived from parent *flocks* which had been kept in a NAI free *establishment* for at least 21 days prior to and at the time of the collection of the eggs;
- 3) the eggs have had their surfaces sanitized (in accordance with Chapter 6.4.);
- 4) the eggs are transported in new or appropriately sanitized packaging materials;
- 5) if the parent *flocks* have been vaccinated against NAI, it has been done in accordance with the provisions of the *Terrestrial Manual* and the nature of the vaccine used and the date of *vaccination* have been attached to the *certificate*.

Article 10.4.12.

Recommendations for the importation of hatching eggs from birds other than poultry

Regardless of the NAI status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

- 1) the parent *flock* birds were subjected to a diagnostic test seven days prior to and at the time of the collection of the eggs to demonstrate freedom from *infection* with NAIV;
- 2) the eggs have had their surfaces sanitized (in accordance with Chapter 6.4.);
- 3) the eggs are transported in new or appropriately sanitized packaging materials;
- 4) if the parent *flocks* have been vaccinated against NAI, it has been done in accordance with the provisions of the *Terrestrial Manual* and the nature of the vaccine used and the date of *vaccination* have been attached to the *certificate*.

Article 10.4.13.

Recommendations for importation from a NAI free country, zone or compartment

For eggs for human consumption

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

- 1) the eggs were produced and packed in a NAI free country, *zone* or *compartment*;
- 2) the eggs are transported in new or appropriately sanitized packaging materials.

Article 10.4.14.

Recommendations for importation from a HPNAI free country, zone or compartment

For eggs for human consumption

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

- 1) the eggs were produced and packed in a HPNAI free country, *zone* or *compartment*;
- 2) the eggs have had their surfaces sanitized (in accordance with Chapter 6.4.);

- 3) the eggs are transported in new or appropriately sanitized packaging materials.

Article 10.4.15.

Recommendations for importation of egg products of poultry

Regardless of the NAI status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

- 1) the *commodity* is derived from eggs which meet the requirements of Articles 10.4.13. or 10.4.14.; or
- 2) the *commodity* has been processed to ensure the destruction of NAI virus in accordance with Article 10.4.25.;

AND

- 3) the necessary precautions were taken to avoid contact of the *commodity* with any source of NAI virus.

Article 10.4.16.

Recommendations for importation from a NAI free country, zone or compartment

For poultry semen

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

- 1) showed no clinical sign of NAI on the day of semen collection;
- 2) were kept in a NAI free country, *zone* or *compartment* for at least the 21 days prior to and at the time of semen collection.

Article 10.4.17.

Recommendations for the importation from a HPNAI free country, zone or compartment

For poultry semen

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

- 1) showed no clinical sign of HPNAI on the day of semen collection;
- 2) were kept in a HPNAI free country, *zone* or *compartment* for at least the 21 days prior to and at the time of semen collection.

Article 10.4.18.

Recommendations for the importation of semen of birds other than poultry

Regardless of the NAI status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the donor birds:

- 1) were kept in isolation approved by the *Veterinary Services* for at least the 21 days prior to semen collection;
- 2) showed no clinical sign of *infection* with a virus which would be considered NAI in *poultry* during the isolation period;
- 3) were tested within 14 days prior to semen collection and shown to be free of NAI *infection*.

Article 10.4.19.

Recommendations for importation from either a NAI or HPNAI free country, zone or compartment

For fresh meat of poultry

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

- 1) which have been kept in a country, *zone* or *compartment* free from HPNAI since they were hatched or for at least the past 21 days;
- 2) which have been slaughtered in an approved *abattoir* in a country, *zone* or *compartment* free from HPNAI and have been subjected to ante- and post-mortem inspections in accordance with Chapter 6.2. and have been found free of any signs suggestive of NAI.

Article 10.4.20.

Recommendations for the importation of meat products of poultry

Regardless of the NAI status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

- 1) the *commodity* is derived from *fresh meat* which meet the requirements of Article 10.4.19.; or
- 2) the *commodity* has been processed to ensure the destruction of NAI virus in accordance with Article 10.4.26.;

AND

- 3) the necessary precautions were taken to avoid contact of the *commodity* with any source of NAI virus.

Article 10.4.21.

Recommendations for the importation of products of poultry origin, other than feather meal and poultry meal, intended for use in animal feeding, or for agricultural or industrial use

Regardless of the NAI status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

- 1) these *commodities* were processed in a NAI free country, *zone* or *compartment* from *poultry* which were kept in a NAI free country, *zone* or *compartment* from the time they were hatched until the time of *slaughter* or for at least the 21 days preceding *slaughter*; or
- 2) these *commodities* have been processed to ensure the destruction of NAI virus (under study);

AND

- 3) the necessary precautions were taken to avoid contact of the *commodity* with any source of NAI virus.

Article 10.4.22.

Recommendations for the importation of feathers and down of poultry

Regardless of the NAI status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

- 1) these *commodities* originated from *poultry* as described in Article 10.4.19. and were processed in a NAI free country, *zone* or *compartment*; or
- 2) these *commodities* have been processed to ensure the destruction of NAI virus (under study);

AND

- 3) the necessary precautions were taken to avoid contact of the *commodity* with any source of NAI virus.

Article 10.4.23.

Recommendations for the importation of feathers and down of birds other than poultry

Regardless of the NAI status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

- 1) these *commodities* have been processed to ensure the destruction of NAI virus (under study); and
- 2) the necessary precautions were taken to avoid contact of the *commodity* with any source of NAI virus.

Article 10.4.24.

Recommendations for the importation of feather meal and poultry meal

Regardless of the NAI status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

- 1) these *commodities* were processed in a NAI free country, *zone* or *compartment* from *poultry* which were kept in a NAI free country, *zone* or *compartment* from the time they were hatched until the time of *slaughter* or for at least the 21 days preceding *slaughter*; or
- 2) these *commodities* have been processed either:
 - a) with moist heat at a minimum temperature of 118°C for minimum of 40 minutes; or
 - b) with a continuous hydrolysing process under at least 3.79 bar of pressure with steam at a minimum temperature of 122°C for a minimum of 15 minutes; or
 - c) with an alternative rendering process that ensures that the internal temperature throughout the product reaches at least 74°C;

AND

- 3) the necessary precautions were taken to avoid contact of the *commodity* with any source of NAI virus.

Article 10.4.25.

Procedures for the inactivation of the AI virus in eggs and egg products

The following times for industry standard temperatures are suitable for the inactivation of AI virus present in eggs and egg products:

	Core temperature (°C)	Time
Whole egg	60	188 seconds
Whole egg blends	60	188 seconds
Whole egg blends	61.1	94 seconds
Liquid egg white	55.6	870 seconds
Liquid egg white	56.7	232 seconds
10% salted yolk	62.2	138 seconds

	Core temperature (°C)	Time
Dried egg white	67	20 hours
Dried egg white	54.4	513 hours

The listed temperatures are indicative of a range that achieves a 7-log kill. Where scientifically documented, variances from these times and temperatures may also be suitable when they achieve the inactivation of the virus.

Article 10.4.26.

Procedures for the inactivation of the AI virus in meat

The following times for industry standard temperatures are suitable for the inactivation of AI virus present in *meat*.

	Core temperature (°C)	Time
Poultry meat	60.0	507 seconds
	65.0	42 seconds
	70.0	3.5 seconds
	73.9	0.51 second

The listed temperatures are indicative of a range that achieves a 7-log kill. Where scientifically documented, variances from these times and temperatures may also be suitable when they achieve the inactivation of the virus.

Article 10.4.27.

Surveillance: introduction

Articles 10.4.27. to 10.4.33. define the principles and provide a guide on the *surveillance* for NAI complementary to Chapter 1.4., applicable to Members seeking to determine their NAI status. This may be for the entire country, *zone* or *compartment*. Guidance for Members seeking free status following an *outbreak* and for the maintenance of NAI status is also provided.

The presence of avian influenza viruses in wild birds creates a particular problem. In essence, no Member can declare itself free from avian influenza (AI) in wild birds. However, the definition of NAI in this chapter refers to the *infection* in *poultry* only, and Articles 10.4.27. to 10.4.33. were developed under this definition.

The impact and epidemiology of NAI 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 NAI at an acceptable level of confidence will need to be adapted to the local situation. Variables such as the frequency of contacts of *poultry* with wild birds, different biosecurity levels and production systems and the commingling of different susceptible species including domestic waterfowl require specific *surveillance* strategies to address each specific situation. It is incumbent upon the Member to provide scientific data that explains the epidemiology of NAI in the region concerned and also demonstrates how all the risk factors are managed. There is therefore considerable latitude available to Members to provide a well-reasoned argument to prove that absence of NAI virus (NAIV) *infection* is assured at an acceptable level of confidence.

Surveillance for NAI should be in the form of a continuing programme designed to establish that the country, *zone* or *compartment*, for which application is made, is free from NAIV *infection*.

Article 10.4.28.

Surveillance: general conditions and methods

- 1) A *surveillance* system in accordance with Chapter 1.4. should be under the responsibility of the *Veterinary Authority*. In particular:
 - a) a formal and ongoing system for detecting and investigating *outbreaks* of *disease* or *NAI infection* should be in place;
 - b) a procedure should be in place for the rapid collection and transport of samples from suspect cases of *NAI* to a *laboratory* for *NAI* diagnosis as described in the *Terrestrial Manual*;
 - c) a system for recording, managing and analysing diagnostic and *surveillance* data should be in place.
- 2) The *NAI surveillance* programme should:
 - a) include an early warning system throughout the production, marketing and processing chain for reporting suspicious cases. Farmers and workers, who have day-to-day contact with *poultry*, as well as diagnosticians, should report promptly any suspicion of *NAI* to the *Veterinary Authority*. They should be supported directly or indirectly (e.g. through private *veterinarians* or *veterinary para-professionals*) by government information programmes and the *Veterinary Authority*. All suspected cases of *NAI* should be investigated immediately. As suspicion cannot always be resolved by epidemiological and clinical investigation alone, samples should be taken and submitted to a *laboratory* for appropriate tests. 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 *NAI* diagnosis and control. In cases where potential public health implications are suspected, notification to the appropriate public health authorities is essential;
 - b) implement, when relevant, regular and frequent clinical inspection, serological and virological testing of high-risk groups of *animals*, such as those adjacent to a *NAI* infected country, *zone* or *compartment*, places where birds and *poultry* of different origins are mixed, such as live bird markets, *poultry* in close proximity to waterfowl or other potential sources of *NAIV*.

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 *NAIV*. 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 *NAIV 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 10.4.29.

Surveillance strategies1. Introduction

The target population for *surveillance* aimed at identification of *disease* and *infection* should cover all the susceptible *poultry* species within the country, *zone* or *compartment*. Active and passive *surveillance* for *NAI* should be ongoing. The frequency of active *surveillance* should be at least every six months. *Surveillance* should be composed of random and targeted approaches using molecular, virological, serological and clinical methods.

The strategy employed may be based on randomised sampling requiring *surveillance* consistent with demonstrating the absence of *NAIV infection* at an acceptable level of confidence. Random *surveillance* is

conducted using serological tests described in the *Terrestrial Manual*. Positive serological results should be followed up with molecular or virological methods.

Targeted *surveillance* (e.g. based on the increased likelihood of *infection* in particular localities or species) may be an appropriate strategy. Virological and serological methods should be used concurrently to define the NAI status of high risk populations.

A Member should justify the *surveillance* strategy chosen as adequate to detect the presence of NAIV *infection* in accordance with Chapter 1.4. and the prevailing epidemiological situation, including cases of HPAI detected in any birds. It may, for example, be appropriate to target clinical *surveillance* at particular species likely to exhibit clear clinical signs (e.g. chickens). Similarly, virological and serological testing could be targeted to species that may not show clinical signs (e.g. ducks).

If a Member wishes to declare freedom from NAIV *infection* in a specific *zone* or *compartment*, the design of the survey and the basis for the sampling process would need to be aimed at the population within the *zone* or *compartment*.

For random surveys, the design of the sampling strategy will need to incorporate 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 Member 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 clearly needs to be based on the prevailing or historical epidemiological situation.

Irrespective of the survey approach 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 for the *vaccination/infection* history and the different species in the target population.

Irrespective of the testing system employed, *surveillance* system 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 both supplementary tests and follow-up investigation to collect diagnostic material from the original sampling unit as well as *flocks* which may be epidemiologically linked to it.

The principles involved in *surveillance* for *disease/infection* are technically well defined. The design of *surveillance* programmes to prove the absence of NAIV *infection/circulation* needs to be carefully followed to avoid producing results that are either insufficiently reliable, or excessively costly and logistically complicated. The design of any *surveillance* programme, therefore, requires inputs from professionals competent and experienced in this field.

2. Clinical surveillance

Clinical *surveillance* aims at the detection of clinical signs of NAI at the *flock* level. Whereas significant emphasis is placed on the diagnostic value of mass serological screening, *surveillance* based on clinical inspection should not be underrated. Monitoring of production parameters, such as increased mortality, reduced feed and water consumption, presence of clinical signs of a respiratory *disease* or a drop in egg production, is important for the early detection of NAIV *infection*. In some cases, the only indication of LPNAIV *infection* may be a drop in feed consumption or egg production.

Clinical *surveillance* and *laboratory* testing should always be applied in series to clarify the status of NAI suspects detected by either of these complementary diagnostic approaches. *Laboratory* testing may confirm clinical suspicion, while clinical *surveillance* may contribute to confirmation of positive serology. Any sampling unit within which suspicious *animals* are detected should have restrictions imposed upon it until NAI *infection* is ruled out.

Identification of suspect *flocks* is vital to the identification of sources of NAIV and to enable the molecular, antigenic and other biological characteristics of the virus to be determined. It is essential that NAIV isolates are sent regularly to the regional Reference Laboratory for genetic and antigenic characterization.

3. Virological surveillance

Virological *surveillance* using tests described in the *Terrestrial Manual* should be conducted:

- a) to monitor at risk populations;
- b) to confirm clinically suspect *cases*;
- c) to follow up positive serological results;
- d) to test 'normal' daily mortality, to ensure early detection of *infection* in the face of *vaccination* or in *establishments* epidemiologically linked to an *outbreak*.

4. Serological surveillance

Serological *surveillance* aims at the detection of antibodies against NAIV. Positive NAIV antibody test results can have four possible causes:

- a) natural *infection* with NAIV;
- b) *vaccination* against NAI;
- c) maternal antibodies derived from a vaccinated or infected parent *flock* are usually found in the yolk and can persist in progeny for up to four weeks;
- d) false positive results due to the lack of specificity of the test.

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

The discovery of clusters of seropositive *flocks* may reflect any of a series of events, including but not limited to the demographics of the population sampled, vaccinal exposure or *infection*. As clustering may signal *infection*, the investigation of all instances should be incorporated in the survey design. Clustering of positive *flocks* is always epidemiologically significant and therefore should be investigated.

If *vaccination* cannot be excluded as the cause of positive serological reactions, diagnostic methods to differentiate antibodies due to *infection* or *vaccination* should be employed.

The results of random or targeted serological surveys are important in providing reliable evidence that no NAIV *infection* is present in a country, *zone* or *compartment*. It is therefore essential that the survey be thoroughly documented.

5. Virological and serological surveillance in vaccinated populations

The *surveillance* strategy is dependent on the type of vaccine used. The protection against AI is haemagglutinin subtype specific. Therefore, two broad *vaccination* strategies exist: 1) inactivated whole AI viruses, and 2) haemagglutinin expression-based vaccines.

In the case of vaccinated populations, the *surveillance* strategy should be based on virological and/or serological methods and clinical *surveillance*. It may be appropriate to use sentinel birds for this purpose. These birds should be unvaccinated, AI virus antibody free birds and clearly and permanently identified. Sentinel birds should be used only if no appropriate *laboratory* procedures are available. The interpretation of serological results in the presence of *vaccination* is described in Article 10.4.33.

Article 10.4.30.

Documentation of NAI or HPNAI free status1. Members declaring freedom from NAI or HPNAI for the country, zone or compartment: additional surveillance procedures

In addition to the general conditions described in above mentioned articles, a Member declaring freedom from NAI or HPNAI for the entire country, or a *zone* or a *compartment* 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 should be planned and implemented according to general conditions and methods described in this chapter, to demonstrate absence of NAIV or HPNAIV *infection*, during the preceding 12 months in susceptible *poultry* populations (vaccinated and non-vaccinated). This requires the support of a *laboratory* able to undertake identification of NAIV or HPNAIV *infection* through virus detection and antibody tests described in the *Terrestrial Manual*. This *surveillance* may be targeted to *poultry* population at specific risks linked to the types of production, possible direct or indirect contact with wild birds, multi-age *flocks*, local trade patterns including live bird markets, use of possibly contaminated surface water, and the presence of more than one species on the holding and poor biosecurity measures in place.

2. Additional requirements for countries, zones or compartments that practise vaccination

Vaccination to prevent the transmission of HPNAI virus may be part of a *disease* control programme. The level of *flock* immunity required to prevent transmission will depend on the *flock* size, composition (e.g. species) and density of the susceptible *poultry* population. It is therefore impossible to be prescriptive. The vaccine should also comply with the provisions stipulated for NAI vaccines in the *Terrestrial Manual*. Based on the epidemiology of NAI in the country, *zone* or *compartment*, it may be that a decision is reached to vaccinate only certain species or other *poultry* subpopulations.

In all vaccinated *flocks* there is a need to perform virological and serological tests to ensure the absence of virus circulation. The use of sentinel *poultry* may provide further confidence of the absence of virus circulation. The tests have to be repeated at least every six months or at shorter intervals according to the risk in the country, *zone* or *compartment*.

Evidence to show the effectiveness of the *vaccination* programme should also be provided.

Article 10.4.31.

Countries, zones or compartments declaring that they have regained freedom from NAI or HPNAI following an outbreak: additional surveillance procedures

In addition to the general conditions described in the above-mentioned articles, a Member declaring that it has regained country, *zone* or *compartment* freedom from NAI or HPNAI virus *infection* should show evidence of an active *surveillance* programme depending on the epidemiological circumstances of the *outbreak* to demonstrate the absence of the *infection*. This will require *surveillance* incorporating virus detection and antibody tests described in the *Terrestrial Manual*. The use of sentinel birds may facilitate the interpretation of *surveillance* results.

A Member declaring freedom of country, *zone* or *compartment* after an *outbreak* of NAI or HPNAI (with or without *vaccination*) should report the results of an active *surveillance* programme in which the NAI or HPNAI susceptible *poultry* population undergoes regular clinical examination and active *surveillance* planned and implemented according to the general conditions and methods described in these recommendations. The *surveillance* should at least give the confidence that can be given by a randomized representative sample of the populations at risk.

Article 10.4.32.

NAI free establishments within HPNAI free compartments: additional surveillance procedures

The declaration of NAI free *establishments* requires the demonstration of absence of NAIV *infection*. Birds in these *establishments* should be randomly tested using virus detection or isolation tests, and serological methods,

following the general conditions of these recommendations. The frequency of testing should be based on the risk of *infection* and at a maximum interval of 21 days.

Article 10.4.33.

The use and interpretation of serological and virus detection tests

Poultry infected with NAI virus produce antibodies to haemagglutinin (HA), neuraminidase (NA), nonstructural proteins (NSPs), nucleoprotein/matrix (NP/M) and the polymerase complex proteins. Detection of antibodies against the polymerase complex proteins will not be covered in this chapter. Tests for NP/M antibodies include direct and blocking ELISA, and agar gel immunodiffusion (AGID) tests. Tests for antibodies against NA include the neuraminidase inhibition (NI), indirect fluorescent antibody and direct and blocking ELISA tests. For the HA, antibodies are detected in haemagglutination inhibition (HI), ELISA and neutralization (SN) tests. The HI test is reliable in avian species but not in mammals. The SN test can be used to detect subtype specific antibodies to the haemagglutinin and is the preferred test for mammals and some avian species. The AGID test is reliable for detection of NP/M antibodies in chickens and turkeys, but not in other avian species. As an alternative, blocking ELISA tests have been developed to detect NP/M antibodies in all avian species.

The HI and NI tests can be used to subtype AI viruses into 16 haemagglutinin and 9 neuraminidase subtypes. Such information is helpful for epidemiological investigations and in categorization of AI viruses.

Poultry can be vaccinated with a variety of AI vaccines including inactivated whole AI virus vaccines, and haemagglutinin expression-based vaccines. Antibodies to the haemagglutinin confer subtype specific protection. Various strategies can be used to differentiate vaccinated from infected birds including serosurveillance in unvaccinated sentinel birds or specific serological tests in the vaccinated birds.

AI virus *infection* of unvaccinated birds including sentinels is detected by antibodies to the NP/M, subtype specific HA or NA proteins, or NSP. *Poultry* vaccinated with inactivated whole AI vaccines containing an influenza virus of the same H sub-type but with a different neuraminidase may be tested for field exposure by applying serological tests directed to the detection of antibodies to the NA of the field virus. For example, birds vaccinated with H7N3 in the face of a H7N1 epidemic may be differentiated from infected birds (DIVA) by detection of subtype specific NA antibodies of the N1 protein of the field virus. Alternatively, in the absence of DIVA, inactivated vaccines may induce low titres of antibodies to NSP and the titre in infected birds would be markedly higher. Encouraging results have been obtained experimentally with this system, but it has not yet been validated in the field. In *poultry* vaccinated with haemagglutinin expression-based vaccines, antibodies are detected to the specific HA, but not any of the other AI viral proteins. *Infection* is evident by antibodies to the NP/M or NSP, or the specific NA protein of the field virus. Vaccines used should comply with the standards of the *Terrestrial Manual*.

All *flocks* with seropositive results should be investigated. Epidemiological and supplementary *laboratory* investigation results should document the status of NAI *infection/circulation* for each positive *flock*.

A confirmatory test should have a higher specificity than the screening test and sensitivity at least equivalent than that of the screening test.

Information should be provided on the performance characteristics and validation of tests used.

1. The follow-up procedure in case of positive test results if vaccination is used

In case of vaccinated populations, one has to exclude the likelihood that positive test results are indicative of virus circulation. To this end, the following procedure should be followed in the investigation of positive serological test results derived from *surveillance* conducted on NAI-vaccinated *poultry*. The investigation should examine all evidence that might confirm or refute the hypothesis that the positive results to the

serological tests employed in the initial survey were not due to virus circulation. All the epidemiological information should be substantiated, and the results should be collated in the final report.

Knowledge of the type of vaccine used is crucial in developing a serological based strategy to differentiate infected from vaccinated *animals*.

- a) Inactivated whole AI virus vaccines can use either homologous or heterologous neuraminidase subtypes between the vaccine and field strains. If *poultry* in the population have antibodies to NP/M and were vaccinated with inactivated whole AI virus vaccine, the following strategies should be applied:
 - i) sentinel birds should remain NP/M antibody negative. If positive for NP/M antibodies, indicating AI virus *infection*, specific HI tests should be performed to identify H5 or H7 AI virus *infection*;
 - ii) if vaccinated with inactivated whole AI virus vaccine containing homologous NA to field virus, the presence of antibodies to NSP could be indicative of *infection*. Sampling should be initiated to exclude the presence of NAIV by either virus isolation or detection of virus specific genomic material or proteins;
 - iii) if vaccinated with inactivated whole AI virus vaccine containing heterologous NA to field virus, presence of antibodies to the field virus NA or NSP would be indicative of *infection*. Sampling should be initiated to exclude the presence of NAIV by either virus isolation or detection of virus specific genomic material or proteins.
 - b) Haemagglutinin expression-based vaccines contain the HA protein or gene homologous to the HA of the field virus. Sentinel birds as described above can be used to detect AI *infection*. In vaccinated or sentinel birds, the presence of antibodies against NP/M, NSP or field virus NA is indicative of *infection*. Sampling should be initiated to exclude the presence of NAIV by either virus isolation or detection of virus specific genomic material or proteins.
2. The follow-up procedure in case of positive test results indicative of infection for determination of infection due to HPNAI or LPNAI virus

The detection of antibodies indicative of a NAI virus *infection* as indicated in point a)i) above will result in the initiation of epidemiological and virological investigations to determine if the *infections* are due to HPNAI or LPNAI viruses.

Virological testing should be initiated in all antibody-positive and at risk populations. The samples should be evaluated for the presence of AI virus, by virus isolation and identification, and/or detection of influenza A specific proteins or nucleic acids (Figure 2). Virus isolation is the gold standard for detecting *infection* by AI virus and the method is described in the *Terrestrial Manual*. All AI virus isolates should be tested to determine HA and NA subtypes, and *in vivo* tested in chickens and/or sequencing of HA proteolytic cleavage site of H5 and H7 subtypes for determination of classification as HPNAI, LPNAI or LPAI (not notifiable) viruses. As an alternative, nucleic acid detection tests have been developed and validated; these tests have the sensitivity of virus isolation, but with the advantage of providing results within a few hours. Samples with detection of H5 and H7 HA subtypes by nucleic acid detection methods should either be submitted for virus isolation, identification, and *in vivo* testing in chickens, or sequencing of nucleic acids for determination of proteolytic cleavage site as HPNAI or LPNAI viruses. The antigen detection systems, because of low sensitivity, are best suited for screening clinical field *cases* for *infection* by Type A influenza virus looking for NP/M proteins. NP/M positive samples should be submitted for virus isolation, identification and pathogenicity determination.

Laboratory results should be examined in the context of the epidemiological situation. Corollary information needed to complement the serological survey and assess the possibility of viral circulation includes but is not limited to:

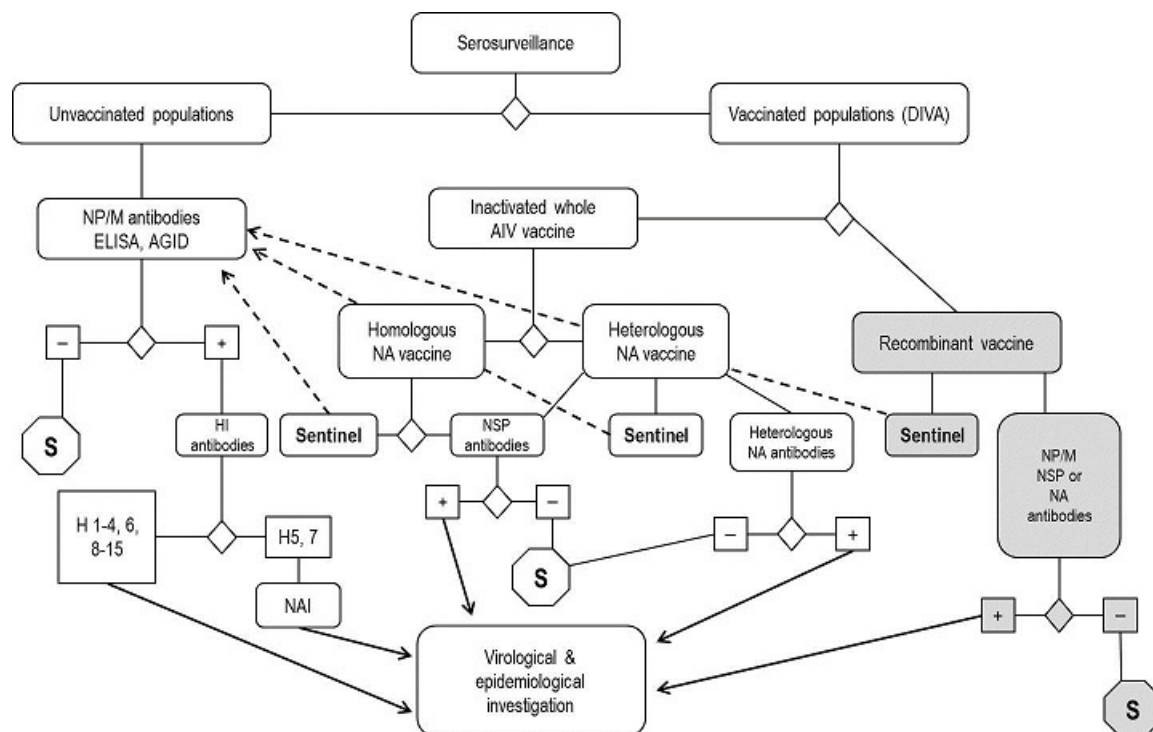
- a) characterization of the existing production systems;
- b) results of clinical *surveillance* of the suspects and their cohorts;
- c) quantification of *vaccinations* performed on the affected sites;
- d) sanitary protocol and history of the affected *establishments*;
- e) control of *animal identification* and movements;

- f) other parameters of regional significance in historic NAIV transmission.

The entire investigative process should be documented as standard operating procedure within the epidemiological *surveillance* programme.

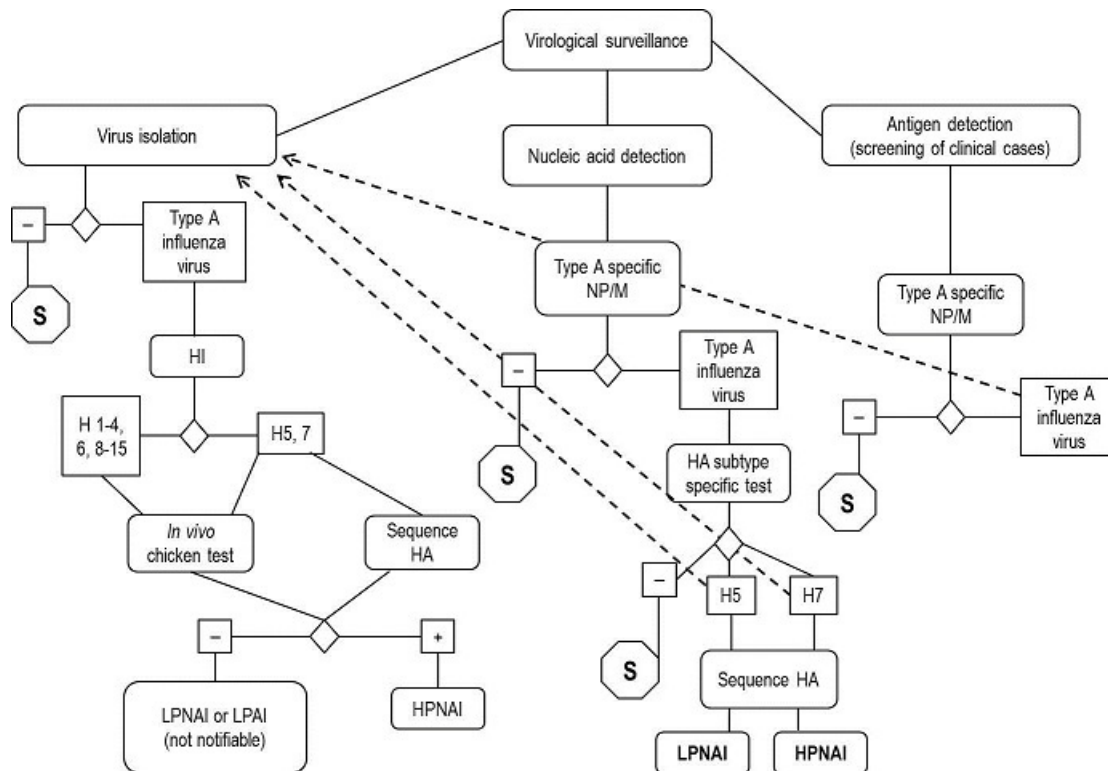
Figures 1 and 2 indicate the tests which are recommended for use in the investigation of *poultry flocks*.

Fig. 1. Schematic representation of laboratory tests for determining evidence of NAI infection through or following serological surveys



Key:	
AGID	Agar gel immunodiffusion
DIVA	Differentiating infected from vaccinated animals
ELISA	Enzyme-linked immunosorbant assay
HA	Haemagglutinin
HI	Haemagglutination inhibition
NA	Neuraminidase
NP/M	Nucleoprotein and matrix protein
NSP	Nonstructural protein
S	No evidence of NAIV

Fig. 2. Schematic representation of laboratory tests for determining evidence of NAI infection using virological methods



Key:	
AGID	Agar gel immunodiffusion
DIVA	Differentiating infected from vaccinated animals
ELISA	Enzyme-linked immunosorbant assay
HA	Haemagglutinin
HI	Haemagglutination inhibition
NA	Neuraminidase
NP/M	Nucleoprotein and matrix protein
NSP	Nonstructural protein
S	No evidence of NAI

CHAPTER 10.5.

AVIAN MYCOPLASMOSIS (*Mycoplasma gallisepticum*)

Article 10.5.1.

General provisions

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

Article 10.5.2.

Establishment free from avian mycoplasmosis

To qualify as free from avian mycoplasmosis, an *establishment* should satisfy the following requirements:

- 1) it is under *official veterinary control*;
- 2) it contains no bird which has been vaccinated against avian mycoplasmosis;
- 3) 5 percent of the birds, with a maximum of 100 birds of different age groups present in the *establishment*, are subjected to the serum-agglutination test with negative results at the age of 10, 18 and 26 weeks, and thereafter at 4-week intervals (the results of at least the last two tests carried out on adult birds should be negative);
- 4) all birds introduced into the *flocks* come from an *establishment* free from avian mycoplasmosis.

Article 10.5.3.

Recommendations for the importation of chickens and turkeys

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

- 1) showed no clinical sign of avian mycoplasmosis on the day of shipment;
- 2) come from an *establishment* free from avian mycoplasmosis; and/or
- 3) were kept in a *quarantine station* for the 28 days prior to shipment and were subjected to a diagnostic test for avian mycoplasmosis with negative results, on two occasions, at the beginning and at the end of the 28-day period.

Article 10.5.4.

Recommendations for the importation of day-old birds

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

- 1) come from *establishments* free from avian mycoplasmosis and from hatcheries which comply with the standards referred to in Chapter 6.4.;
- 2) were shipped in clean and unused packages.

Article 10.5.5.

Recommendations for the importation of hatching eggs of chickens and turkeys

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

- 1) have been disinfected in conformity with the standards referred to in Chapter 6.4.;
 - 2) come from *establishments* free from avian mycoplasmosis and from hatcheries which comply with the standards referred to in Chapter 6.4.;
 - 3) were shipped in clean and unused packages.
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CHAPTER 10.6.

DUCK VIRUS HEPATITIS

Article 10.6.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for duck virus hepatitis (DVH) shall be seven days.

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

Article 10.6.2.

Recommendations for the importation of ducks

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

- 1) showed no clinical sign of DVH on the day of shipment;
- 2) come from *establishments* which are recognised as being free from DVH;
- 3) have not been vaccinated against DVH; or
- 4) were vaccinated against DVH (the nature of the vaccine used and the date of *vaccination* should also be stated in the *certificate*).

Article 10.6.3.

Recommendations for the importation of day-old ducks

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

- 1) come from *establishments* and/or hatcheries which are regularly inspected by the *Veterinary Authority* and from hatcheries which comply with the standards referred to in Chapter 6.4.;
- 2) have not been vaccinated against DVH; or
- 3) were vaccinated against DVH (the nature of the vaccine used and the date of *vaccination* should also be stated in the *certificate*);
- 4) are the progeny of parent *flocks* which:
 - a) come from *establishments* and/or hatcheries which are recognised as being free from DVH;
 - b) come from *establishments* and/or hatcheries in which *vaccination* against DVH is not practised on the parent stock; or
 - c) come from *establishments* and/or hatcheries in which *vaccination* against DVH is practised on the parent stock;
- 5) were shipped in clean and unused packages.

Article 10.6.4.

Recommendations for the importation of hatching eggs of ducks

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

- 1) have been disinfected in conformity with the standards referred to in Chapter 6.4.;
 - 2) come from *establishments* and/or hatcheries which are recognised as being free from DVH and from hatcheries which comply with the standards referred to in Chapter 6.4.;
 - 3) were shipped in clean and unused packages.
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CHAPTER 10.7.

FOWL TYPHOID AND PULLORUM DISEASE

Article 10.7.1.

General provisions

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

Article 10.7.2.

Recommendations for the importation of domestic birds

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

- 1) showed no clinical sign of fowl typhoid and pullorum disease on the day of shipment;
- 2) come from *establishments* which are recognised as being free from fowl typhoid and pullorum disease; and/or
- 3) have been subjected to a diagnostic test for fowl typhoid and pullorum disease with negative results; and/or
- 4) were kept in a *quarantine station* for not less than 21 days prior to shipment.

Article 10.7.3.

Recommendations for the importation of day-old birds

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

- 1) come from *establishments* and/or hatcheries which are recognised as being free from fowl typhoid and pullorum disease and from hatcheries which comply with the standards referred to in Chapter 6.4.;
- 2) were shipped in clean and unused packages.

Article 10.7.4.

Recommendations for the importation of hatching eggs of domestic birds

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

- 1) have been disinfected in conformity with the standards referred to in Chapter 6.4.;
- 2) come from *establishments* and/or hatcheries which are recognised as being free from fowl typhoid and pullorum disease and from hatcheries which comply with the standards referred to in Chapter 6.4.;
- 3) were shipped in clean and unused packages.

CHAPTER 10.8.
INFECTIOUS BURSAL DISEASE
(GUMBORO DISEASE)

Article 10.8.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for infectious bursal disease shall be seven days.

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

Article 10.8.2.

Recommendations for the importation of domestic birds

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

- 1) showed no clinical sign of infectious bursal disease on the day of shipment;
- 2) come from an *establishment* which is regularly inspected by the *Veterinary Authority*;
- 3) have not been vaccinated against infectious bursal disease and come from an *establishment* free from infectious bursal disease as demonstrated by the AGP test; or
- 4) were vaccinated against infectious bursal disease (the nature of the vaccine used and the date of *vaccination* should also be stated in the *certificate*).

Article 10.8.3.

Recommendations for importation from countries considered infected with infectious bursal disease

For day-old birds

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

- 1) come from *establishments* which are regularly inspected by the *Veterinary Authority* and from hatcheries which comply with the standards referred to in Chapter 6.4.;
- 2) have not been vaccinated against infectious bursal disease; or
- 3) were vaccinated against infectious bursal disease (the nature of the vaccine used and the date of *vaccination* should also be stated in the *certificate*);
- 4) are the progeny of parent *flocks* which come from *establishments*:
 - a) which are recognised as being free from infectious bursal disease as demonstrated by the AGP test;
 - b) in which *vaccination* against infectious bursal disease is not practised on the parent stock; or
 - c) in which *vaccination* against infectious bursal disease is practised on the parent stock;
- 5) were shipped in clean and unused packages.

Article 10.8.4.

Recommendations for the importation of hatching eggs of domestic birds

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

- 1) have been disinfected in conformity with the standards referred to in Chapter 6.4.;
 - 2) come from *establishments* which are regularly inspected by the *Veterinary Authority* and from hatcheries which comply with the standards referred to in Chapter 6.4.;
 - 3) were shipped in clean and unused packages.
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CHAPTER 10.9.

NEWCASTLE DISEASE

Article 10.9.1.

General provisions

- 1) For the purposes of the *Terrestrial Code*, Newcastle disease (ND) is defined as an *infection of poultry* caused by a virus (NDV) of avian paramyxovirus serotype 1 (APMV-1) that meets one of the following criteria for virulence:
 - a) the virus has an intracerebral pathogenicity index (ICPI) in day-old chicks (*Gallus gallus*) of 0.7 or greater; or
 - b) multiple basic amino acids have been demonstrated in the virus (either directly or by deduction) at the C-terminus of the F2 protein and phenylalanine at residue 117, which is the N-terminus of the F1 protein. The term 'multiple basic amino acids' refers to at least three arginine or lysine residues between residues 113 and 116. Failure to demonstrate the characteristic pattern of amino acid residues as described above would require characterisation of the isolated virus by an ICPI test.

In this definition, amino acid residues are numbered from the N-terminus of the amino acid sequence deduced from the nucleotide sequence of the F0 gene, 113–116 corresponds to residues –4 to –1 from the cleavage site.'

- 2) *Poultry* is defined as 'all domesticated birds, including backyard *poultry*, used for the production of *meat* or eggs for consumption, for the production of other commercial products, for restocking supplies of game, or for breeding these categories of birds, as well as fighting cocks used for any purpose'.

Birds that are kept in captivity for any reason other than those reasons referred to in the preceding paragraph, including those that are kept for shows, races, exhibitions, competitions, or for breeding or selling these categories of birds as well as pet birds, are not considered to be *poultry*.

- 3) For the purposes of the *Terrestrial Code*, the *incubation period* for ND shall be 21 days.
- 4) This chapter deals with NDV *infection of poultry* as defined in Point 2 above, in the presence or absence of clinical signs.
- 5) The occurrence of *infection* with NDV is defined as the isolation and identification of NDV as such or the detection of viral RNA specific for NDV.
- 6) Standards for diagnostic tests, including pathogenicity testing, are described in the *Terrestrial Manual*. When the use of ND vaccines is appropriate, those vaccines should comply with the standards described in the *Terrestrial Manual*.
- 7) A Member should not impose immediate bans on the trade in *poultry commodities* in response to a notification, according to Article 1.1.3. of the *Terrestrial Code*, of *infection* with NDV in birds other than *poultry*, including wild birds.

Article 10.9.2.

Determination of the ND status of a country, zone or compartment

The ND status of a country, a *zone* or a *compartment* can be determined on the basis of the following criteria:

- 1) ND is notifiable in the whole country, an on-going ND awareness programme is in place, and all notified suspect occurrences of ND are subjected to field and, where applicable, *laboratory* investigations;

- 2) appropriate *surveillance* is in place to demonstrate the presence of NDV *infection* in the absence of clinical signs in *poultry*, this may be achieved through an ND *surveillance* programme in accordance with Articles 10.9.22. to 10.9.26.;
- 3) consideration of all epidemiological factors for ND occurrence and their historical perspective.

Article 10.9.3.

ND free country, zone or compartment

A country, *zone* or *compartment* may be considered free from ND when it has been shown that NDV *infection* in *poultry* has not been present in the country, *zone* or *compartment* for the past 12 months, based on *surveillance* in accordance with Articles 10.9.22. to 10.9.26.

If *infection* has occurred in *poultry* in a previously free country, *zone* or *compartment*, ND free status can be regained three months after a *stamping-out policy* (including *disinfection* of all affected *establishments*) is applied, providing that *surveillance* in accordance with Articles 10.9.22. to 10.9.26. has been carried out during that three-month period.

Article 10.9.4.

Recommendations for importation from an ND free country, zone or compartment as defined in Article 10.9.3.

For live poultry (other than day-old poultry)

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

- 1) the *poultry* showed no clinical sign suggestive of ND on the day of shipment;
- 2) the *poultry* were kept in an ND free country, *zone* or *compartment* since they were hatched or for at least the past 21 days;
- 3) the *poultry* are transported in new or appropriately sanitized *containers*;
- 4) if the *poultry* have been vaccinated against ND, it has been done in accordance with the provisions of the *Terrestrial Manual* and the nature of the vaccine used and the date of *vaccination* have been attached to the *certificate*.

Article 10.9.5.

Recommendations for the importation of live birds other than poultry

Regardless of the ND status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

- 1) the birds showed no clinical sign suggestive of *infection* by NDV on the day of shipment;
- 2) the birds were kept in isolation approved by the *Veterinary Services* since they were hatched or for at least the 21 days prior to shipment and showed no clinical sign of *infection* during the isolation period;
- 3) a statistically valid sample of the birds, selected in accordance with the provisions of Article 10.9.24., was subjected to a diagnostic test within 14 days prior to shipment to demonstrate freedom from *infection* with NDV;
- 4) the birds are transported in new or appropriately sanitized *containers*;
- 5) if the birds have been vaccinated against ND, it has been done in accordance with the provisions of the *Terrestrial Manual* and the nature of the vaccine used and the date of *vaccination* have been attached to the *certificate*.

Article 10.9.6.

Recommendations for importation from an ND free country, zone or compartment

For day-old live poultry

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

- 1) the *poultry* were hatched and kept in an ND free country, *zone* or *compartment* since they were hatched;
- 2) the *poultry* were derived from parent *flocks* which had been kept in an ND free country, *zone* or *compartment* for at least 21 days prior to and at the time of the collection of the eggs;
- 3) the *poultry* are transported in new or appropriately sanitized *containers*;
- 4) if the *poultry* or parent *flocks* have been vaccinated against ND, it has been done in accordance with the provisions of the *Terrestrial Manual* and the nature of the vaccine used and the date of *vaccination* have been attached to the *certificate*.

Article 10.9.7.

Recommendations for the importation of day-old live birds other than poultry

Regardless of the ND status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

- 1) the birds showed no clinical sign suggestive of *infection* by NDV on the day of shipment;
- 2) the birds were hatched and kept in isolation approved by the *Veterinary Services*;
- 3) the parent *flock* birds were subjected to a diagnostic test at the time of the collection of the eggs to demonstrate freedom from *infection* with NDV;
- 4) the birds are transported in new or appropriately sanitized *containers*;
- 5) if the birds or parent *flocks* have been vaccinated against ND, it has been done in accordance with the provisions of the *Terrestrial Manual* and the nature of the vaccine used and the date of *vaccination* have been attached to the *certificate*.

Article 10.9.8.

Recommendations for importation from an ND free country, zone or compartment

For hatching eggs of poultry

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

- 1) the eggs came from an ND free country, *zone* or *compartment*;
- 2) the eggs were derived from parent *flocks* which had been kept in an ND free country, *zone* or *compartment* for at least 21 days prior to and at the time of the collection of the eggs;
- 3) the eggs are transported in new or appropriately sanitized packaging materials;
- 4) if the parent *flocks* have been vaccinated against ND, it has been done in accordance with the provisions of the *Terrestrial Manual* and the nature of the vaccine used and the date of *vaccination* have been attached to the *certificate*.

Article 10.9.9.

Recommendations for the importation of hatching eggs from birds other than poultry

Regardless of the ND status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

- 1) the parent *flock* birds were subjected to a diagnostic test seven days prior to and at the time of the collection of the eggs to demonstrate freedom from *infection* with NDV;
- 2) the eggs have had their surfaces sanitized (in accordance with Chapter 6.4.);
- 3) the eggs are transported in new or appropriately sanitized packaging materials;
- 4) if the parent *flocks* have been vaccinated against ND, it has been done in accordance with the provisions of the *Terrestrial Manual* and the nature of the vaccine used and the date of *vaccination* have been attached to the *certificate*.

Article 10.9.10.

Recommendations for importation from an ND free country, zone or compartmentFor eggs for human consumption

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

- 1) the eggs were produced and packed in an ND free country, *zone* or *compartment*;
- 2) the eggs are transported in new or appropriately sanitized packaging materials.

Article 10.9.11.

Recommendations for importation of egg products of poultry

Regardless of the ND status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

- 1) the *commodity* is derived from eggs which meet the requirements of Article 10.9.10.; or
- 2) the *commodity* has been processed to ensure the destruction of NDV in accordance with Article 10.9.20.;

AND

- 3) the necessary precautions were taken to avoid contact of the egg products with any source of NDV.

Article 10.9.12.

Recommendations for importation from an ND free country, zone or compartmentFor poultry semen

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

- 1) showed no clinical sign suggestive of ND on the day of semen collection;
- 2) were kept in an ND free country, *zone* or *compartment* for at least the 21 days prior to and at the time of semen collection.

Article 10.9.13.

Recommendations for the importation of semen of birds other than poultry

Regardless of the ND status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the donor birds:

- 1) were kept in isolation approved by the *Veterinary Services* for at least the 21 days prior to and on the day of semen collection;
- 2) showed no clinical sign suggestive of *infection* with NDV during the isolation period and on the day of semen collection;
- 3) were subjected to a diagnostic test within 14 days prior to semen collection to demonstrate freedom from *infection* with NDV.

Article 10.9.14.

Recommendations for importation from an ND free country, zone or compartment

For fresh meat of poultry

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

- 1) which have been kept in an ND free country, *zone* or *compartment* since they were hatched or for at least the past 21 days;
- 2) which have been slaughtered in an approved *abattoir* in an ND free country, *zone* or *compartment* and have been subjected to ante- and post-mortem inspections in accordance with Chapter 6.2. and have been found free of any sign suggestive of ND.

Article 10.9.15.

Recommendations for importation of meat products of poultry

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

- 1) the *commodity* is derived from *fresh meat* which meet the requirements of Article 10.9.14.; or
- 2) the *commodity* has been processed to ensure the destruction of NDV in accordance with Article 10.9.21.;

AND

- 3) the necessary precautions were taken to avoid contact of the *commodity* with any source of NDV.

Article 10.9.16.

Recommendations for the importation of products of poultry origin, other than feather meal and poultry meal, intended for use in animal feeding, or for agricultural or industrial use

Regardless of the ND status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

- 1) these *commodities* were processed in a ND free country, *zone* or *compartment* from *poultry* which were kept in a ND free country, *zone* or *compartment* from the time they were hatched until the time of *slaughter* or for at least the 21 days preceding *slaughter*; or
- 2) these *commodities* have been processed to ensure the destruction of NDV (under study);

AND

- 3) the necessary precautions were taken to avoid contact of the *commodity* with any source of NDV.

Article 10.9.17.

Recommendations for the importation of feathers and down of poultry

Regardless of the ND status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

- 1) these *commodities* originated from *poultry* as described in Article 10.9.14. and were processed in a ND free country, *zone* or *compartment*; or
- 2) these *commodities* have been processed to ensure the destruction of NDV (under study);

AND

- 3) the necessary precautions were taken to avoid contact of the *commodity* with any source of NDV.

Article 10.9.18.

Recommendations for the importation of feathers and down of birds other than poultry

Regardless of the ND status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

- 1) these *commodities* have been processed to ensure the destruction of NDV (under study); and
- 2) the necessary precautions were taken to avoid contact of the *commodity* with any source of NDV.

Article 10.9.19.

Recommendations for the importation of feather meal and poultry meal

Regardless of the ND status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:

- 1) these *commodities* were processed in a ND free country, *zone* or *compartment* from *poultry* which were kept in a ND free country, *zone* or *compartment* from the time they were hatched until the time of *slaughter* or for at least the 21 days preceding *slaughter*; or
- 2) these *commodities* have been processed either:
 - a) with moist heat at a minimum temperature of 118°C for minimum of 40 minutes; or
 - b) with a continuous hydrolysing process under at least 3.79 bar of pressure with steam at a minimum temperature of 122°C for a minimum of 15 minutes; or
 - c) with an alternative rendering process that ensures that the internal temperature throughout the product reaches at least 74°C for a minimum of 280 seconds;

AND

- 3) the necessary precautions were taken to avoid contact of the *commodity* with any source of ND virus.

Article 10.9.20.

Procedures for the inactivation of the ND virus in eggs and egg products

The following times and temperatures are suitable for the inactivation of ND virus present in eggs and egg products:

	Core temperature (°C)	Time
Whole egg	55	2,521 seconds
Whole egg	57	1,596 seconds
Whole egg	59	674 seconds
Liquid egg white	55	2,278 seconds
Liquid egg white	57	986 seconds
Liquid egg white	59	301 seconds
10% salted yolk	55	176 seconds
Dried egg white	57	50.4 hours

The listed temperatures are indicative of a range that achieves a 7-log kill. Where scientifically documented, variances from these times and temperatures may also be suitable when they achieve the inactivation of the virus.

Article 10.9.21.

Procedures for the inactivation of the ND virus in meat

The following times for industry standard temperatures are suitable for the inactivation of ND virus present in *meat*.

	Core temperature (°C)	Time
Poultry meat	65.0	39.8 seconds
	70.0	3.6 seconds
	74.0	0.5 second
	80.0	0.03 second

The listed temperatures are indicative of a range that achieves a 7-log kill. Where scientifically documented, variances from these times and temperatures may also be suitable when they achieve the inactivation of the virus.

Article 10.9.22.

Surveillance: introduction

Articles 10.9.22. to 10.9.26. define the principles and provide a guide on the *surveillance* for ND as defined in Article 10.9.1. and is complementary to Chapter 1.4. It is applicable to Members seeking to determine their ND status. This may be for the entire country, *zone* or *compartment*. Guidance for Members seeking free status following an *outbreak* and for the maintenance of ND status is also provided.

Surveillance for ND is complicated by the known occurrence of avian paramyxovirus serotype 1 (APMV-1) *infections* in many bird species, both domestic and wild, and the widespread utilization of ND vaccines in domestic *poultry*.

The impact and epidemiology of ND differ widely in different regions of the world and therefore it is not possible to provide specific recommendations for all situations. Therefore, *surveillance* strategies employed for demonstrating freedom from ND at an acceptable level of confidence will need to be adapted to the local situation. Variables such as the frequency of contacts of *poultry* with wild birds, different biosecurity levels, production systems and the commingling of different susceptible species require specific *surveillance* strategies to address each specific situation. It is incumbent upon the Member to provide scientific data that explains the epidemiology of ND in the region concerned and also demonstrates how all the risk factors are managed. There is, therefore, considerable latitude available to Members to provide a well-reasoned argument to prove freedom from NDV *infection*.

Surveillance for ND should be in the form of a continuing programme designed to establish that the country, *zone* or *compartment*, for which application is made, is free from NDV *infection*.

Article 10.9.23.

Surveillance: general conditions and methods

- 1) A *surveillance* system in accordance with Chapter 1.4. should be under the responsibility of the *Veterinary Authority*. In particular there should be in place:
 - a) a formal and ongoing system for detecting and investigating *outbreaks* of *disease* or NDV *infection*;
 - b) a procedure for the rapid collection and transport of samples from suspect cases of ND to a *laboratory* for ND diagnosis as described in the *Terrestrial Manual*;
 - c) a system for recording, managing and analysing diagnostic and *surveillance* data.
- 2) The ND *surveillance* programme should:
 - a) include an early warning system throughout the production, marketing and processing chain for reporting suspicious cases. Farmers and workers, who have day-to-day contact with *poultry*, as well as diagnosticians, should report promptly any suspicion of ND to the *Veterinary Authority*. They should be supported directly or indirectly (e.g. through private *veterinarians* or *veterinary para-professionals*) by government information programmes and the *Veterinary Authority*. All suspected cases of ND should be investigated immediately. As suspicion cannot be resolved by epidemiological and clinical investigation alone, samples should be taken and submitted to a *laboratory* for appropriate tests. This requires that sampling kits and other equipment are available to those responsible for *surveillance*. Personnel responsible for *surveillance* should be able to call for assistance from a team with expertise in ND diagnosis and control;
 - b) implement, when relevant, regular and frequent clinical, virological and serological *surveillance* of high risk groups of *poultry* within the target population (e.g. those adjacent to an ND infected country, *zone*, *compartment*, places where birds and *poultry* of different origins are mixed, or other sources of NDV).

An effective *surveillance* system may identify suspicious cases that require follow-up and investigation to confirm or exclude that the cause of the condition is due to NDV *infection*. 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 NDV *infection* should 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

Any *surveillance* programme requires inputs from professionals competent and experienced in this field and should be thoroughly documented. The design of *surveillance* programmes to prove the absence of NDV *infection* / circulation needs to be carefully followed to avoid producing results that are either unreliable, or excessively costly and logistically complicated.

If a Member wishes to declare freedom from NDV *infection* in a country, *zone* or *compartment*, the subpopulation used for the *surveillance* for the *disease* / *infection* should be representative of all *poultry* within the country, *zone* or *compartment*. Multiple *surveillance* methods should be used concurrently to accurately define the true ND status of *poultry* populations. Active and passive *surveillance* for ND should be ongoing with the frequency of active *surveillance* being appropriate to the disease situation in the country. *Surveillance* should be composed of random and/or targeted approaches, dependent on the local epidemiological situation and using clinical, virological and serological methods as described in the *Terrestrial Manual*. If alternative tests are used they should have been validated as fit-for-purpose in accordance with OIE standards. A Member should justify the *surveillance* strategy chosen as adequate to detect the presence of NDV *infection* in accordance with Chapter 1.4. and the prevailing epidemiological situation.

In surveys, the sample size selected for testing should be statistically justified to detect *infection* at a predetermined target prevalence. The sample size and expected prevalence determine the level of confidence in the results of the survey. The survey design and frequency of sampling should be dependent on the historical and current local epidemiological situation. The Member should justify the choice of survey design and confidence level based on the objectives of *surveillance* and the epidemiological situation, in accordance with Chapter 1.4.

Targeted *surveillance* (e.g. based on the increased likelihood of *infection* in a population) may be an appropriate strategy.

It may, for example, be appropriate to target clinical *surveillance* at particular species likely to exhibit clear clinical signs (e.g. unvaccinated chickens). Similarly, virological and serological testing could target species that may not show clinical signs (Article 10.9.2.) of ND and are not routinely vaccinated (e.g. ducks). *Surveillance* may also target *poultry* populations at specific risk, for example direct or indirect contact with wild birds, multi-age *flocks*, local trade patterns including live *poultry* markets, the presence of more than one species on the holding and poor biosecurity measures in place. In situations where wild birds have been shown to play a role in the local epidemiology of ND, *surveillance* of wild birds may be of value in alerting *Veterinary Services* to the possible exposure of *poultry* and, in particular, of free ranging *poultry*.

The sensitivity and specificity of the diagnostic tests are key factors in the choice of survey design, which should anticipate the occurrence of false positive and false negative reactions. Ideally, the sensitivity and specificity of the tests used should be validated for the *vaccination* / *infection* history and for the different species in the target population. If the characteristics of the testing system are known, the rate at which these false reactions 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 both supplementary tests and follow-up investigation to collect diagnostic material from the original sampling unit as well as *flocks* which may be epidemiologically linked to it.

The results of active and passive *surveillance* are important in providing reliable evidence that no NDV *infection* is present in a country, *zone* or *compartment*.

2. Clinical surveillance

Clinical *surveillance* aims to detect clinical signs suggestive of ND at the *flock* level and should not be underestimated as an early indication of *infection*. Monitoring of production parameters (e.g. a drop in feed or water consumption or egg production) is important for the early detection of NDV *infection* in some populations, as there may be no, or mild clinical signs, particularly if they are vaccinated. Any sampling unit

within which suspicious *animals* are detected should be considered as infected until evidence to the contrary is produced. Identification of infected *flocks* is vital to the identification of sources of NDV.

A presumptive diagnosis of clinical ND in suspect infected populations should always be confirmed by virological testing in a *laboratory*. This will enable the molecular, antigenic and other biological characteristics of the virus to be determined.

It is desirable that NDV isolates are sent promptly to an OIE Reference Laboratory for archiving and further characterization if required.

3. Virological surveillance

Virological *surveillance* should be conducted using tests described in the *Terrestrial Manual* to:

- a) monitor at risk populations;
- b) confirm suspect clinical cases;
- c) follow up positive serological results in unvaccinated populations or sentinel birds;
- d) test 'normal' daily mortalities (if warranted by an increased risk e.g. *infection* in the face of *vaccination* or in establishments epidemiologically linked to an *outbreak*).

4. Serological surveillance

Where *vaccination* is carried out, serological *surveillance* is of limited value. Serological *surveillance* cannot be used to discriminate between NDV and other APMV-1. Test procedures and interpretations of results are as described in the *Terrestrial Manual*. Positive NDV antibody test results can have five possible causes:

- a) natural *infection* with APMV-1;
- b) *vaccination* against ND;
- c) exposure to vaccine virus;
- d) maternal antibodies derived from a vaccinated or infected parent *flock* are usually found in the yolk and can persist in progeny for up to four weeks;
- e) non-specific test reactions.

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

Discovery of seropositive, unvaccinated *flocks* should be investigated further by conducting a thorough epidemiological investigation. Since seropositive results are not necessarily indicative of *infection*, virological methods should be used to confirm the presence of NDV in such populations. Until validated strategies and tools to differentiate vaccinated *animals* from those infected with field APMV-1 are available, serological tools should not be used to identify NDV *infection* in vaccinated populations.

5. Use of sentinel poultry

There are various applications of the use of sentinel *poultry* as a *surveillance* tool to detect virus circulation. They may be used to monitor vaccinated populations or species which are less susceptible to the development of clinical *disease* for the circulation of virus. Sentinel *poultry* should be immunologically naïve and may be used in vaccinated *flocks*. In case of the use of sentinel *poultry*, the structure and organisation of the *poultry* sector, the type of vaccine used and local epidemiological factors will determine the type of production systems where sentinels should be placed, the frequency of placement and monitoring of the sentinels.

Sentinel *poultry* should be in close contact with, but should be identified to be clearly differentiated from, the target population. Sentinel *poultry* should be observed regularly for evidence of clinical *disease* and any disease incidents investigated by prompt *laboratory* testing. The species to be used as sentinels should be proven to be highly susceptible to *infection* and ideally develop clear signs of clinical *disease*. Where the

sentinel *poultry* do not necessarily develop overt clinical *disease* a programme of regular active testing by virological and serological tests should be used (the development of clinical *disease* may be dependent on the sentinel species used or use of live vaccine in the target population that may infect the sentinel *poultry*). The testing regime and the interpretation of the results will depend on the type of vaccine used in the target population. Sentinel birds should be used only if no appropriate *laboratory* procedures are available.

Article 10.9.25.

Documentation of ND free status: additional surveillance procedures

The requirements for a country, *zone* or *compartment* to declare freedom from ND are given in Article 10.9.3.

A Member declaring freedom of a country, *zone* or *compartment* (with or without *vaccination*) should report the results of a *surveillance* programme in which the ND susceptible *poultry* population undergoes regular *surveillance* planned and implemented according to the general conditions and methods described in these recommendations.

1. Members declaring freedom from ND for the country, zone or compartment

In addition to the general conditions described in the *Terrestrial Code*, a Member declaring freedom from ND for the entire country, or a *zone* or a *compartment* should provide evidence for the existence of an effective *surveillance* programme. The *surveillance* programme should be planned and implemented according to general conditions and methods described in this chapter to demonstrate absence of NDV *infection* in *poultry* during the preceding 12 months.

2. Additional requirements for countries, zones or compartments that practice vaccination

Vaccination against ND may be used as a component of a disease prevention and control programme. The vaccine used should comply with the provisions of the *Terrestrial Manual*.

In vaccinated populations there is a need to perform *surveillance* to ensure the absence of NDV circulation. The use of sentinel *poultry* may provide further confidence of the absence of virus circulation. The *surveillance* should be repeated at least every six months or at shorter intervals according to the risk in the country, *zone* or *compartment*, or evidence to show the effectiveness of the *vaccination* programme is regularly provided.

Article 10.9.26.

Countries, zones or compartments regaining freedom from ND following an outbreak: additional surveillance procedures

A Member regaining country, *zone* or *compartment* freedom from ND should show evidence of an active *surveillance* programme depending on the epidemiological circumstances of the *outbreak* to demonstrate the absence of the *infection*.

A Member declaring freedom of a country, *zone* or *compartment* after an *outbreak* of ND (with or without *vaccination*) should report the results of a *surveillance* programme in which the ND susceptible *poultry* population undergoes regular *surveillance* planned and implemented according to the general conditions and methods described in these recommendations.

SECTION 11.

BOVIDAE

CHAPTER 11.1.

BOVINE ANAPLASMOSIS

Article 11.1.1.

General provisions

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

Article 11.1.2.

Recommendations for importation from countries considered infected with bovine anaplasmosis

For cattle

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

- 1) showed no clinical sign of bovine anaplasmosis on the day of shipment; and
- 2) were, since birth, kept in a *zone* known to be free of bovine anaplasmosis for the previous two years;

OR

- 3) showed no clinical sign of bovine anaplasmosis on the day of shipment; and
- 4) were subjected to a diagnostic test for bovine anaplasmosis with negative results during 30 days prior to shipment; and
- 5) were treated with an effective drug such as oxytetracycline for five consecutive days at a dose of 22 mg/kg (under study);

AND

in either of the above cases:

- 6) were treated with an acaricide and, if necessary, a repellent against biting insects prior to shipment and were completely free of ticks.
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CHAPTER 11.2.
BOVINE BABESIOSIS

Article 11.2.1.

General provisions

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

Article 11.2.2.

Recommendations for importation from countries considered infected with bovine babesiosis

For cattle

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

- 1) showed no clinical sign of bovine babesiosis on the day of shipment; and
- 2) were, since birth, resident in a *zone* known to be free of bovine babesiosis for the previous two years;

OR

- 3) showed no clinical sign of bovine babesiosis on the day of shipment; and
- 4) were subjected to a diagnostic test for bovine babesiosis with negative results during 30 days prior to shipment; and
- 5) were treated with an effective drug such as imidocarb as a single dose injection at 2 mg/kg or amicarbalide at 10 mg/kg (under study);

AND

in either of the above cases:

- 6) were treated with an acaricide prior to shipment and were completely free of ticks.
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CHAPTER 11.3.

BOVINE BRUCELLOSIS

Article 11.3.1.

General provisions

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

Article 11.3.2.

Country or zone free from bovine brucellosis

To qualify as free from bovine brucellosis, a country or *zone* shall satisfy the following requirements:

- 1) bovine brucellosis or any suspicion thereof is notifiable in the country;
- 2) the entire cattle population of a country or *zone* is under *official veterinary control* and it has been ascertained that the rate of brucellosis *infection* does not exceed 0.2 percent of the cattle *herds* in the country or *zone* under consideration;
- 3) the serological tests for bovine brucellosis are periodically conducted in each *herd*, with or without the ring test;
- 4) no *animal* has been vaccinated against bovine brucellosis for at least the past three years;
- 5) all reactors are slaughtered;
- 6) *animals* introduced into a free country or *zone* shall only come from *herds* officially free from bovine brucellosis or from *herds* free from bovine brucellosis. This condition may be waived for *animals* which have not been vaccinated and which, prior to entry into the *herd*, were isolated and were subjected to the serological tests for bovine brucellosis with negative results on two occasions, with an interval of 30 days between each test. These tests are not considered valid in female *animals* which have calved during the past 14 days.

In a country where all *herds* of cattle have qualified as officially free from bovine brucellosis and where no reactor has been found for the past five years, the system for further control may be decided by the country concerned.

Article 11.3.3.

Herd officially free from bovine brucellosis

To qualify as officially free from bovine brucellosis, a *herd* of cattle shall satisfy the following requirements:

- 1) it is under *official veterinary control*;
- 2) it contains no *animal* which has been vaccinated against bovine brucellosis during at least the past three years;
- 3) it only contains *animals* which have not showed evidence of bovine brucellosis *infection* during the past six months, all suspect *cases* (such as *animals* which have prematurely calved) having been subjected to the necessary laboratory investigations;
- 4) all cattle over the age of one year (except castrated males) were subjected to serological tests with negative results on two occasions, at an interval of 12 months between each test; this requirement is maintained even

if the entire *herd* is normally tested every year or testing is conducted in conformity with other requirements established by the *Veterinary Authority* of the country concerned;

- 5) additions to the *herd* shall only come from *herds* officially free from bovine brucellosis. This condition may be waived for *animals* which have not been vaccinated, come from a *herd* free from bovine brucellosis, provided that negative results were shown following a buffered *Brucella* antigen test and the complement fixation test during the 30 days prior to entry into the *herd*. Any recently calved or calving *animal* should be retested after 14 days, as tests are not considered valid in female *animals* which have calved during the past 14 days.

Article 11.3.4.

Herd free from bovine brucellosis

To qualify as free from bovine brucellosis, a *herd* of cattle shall satisfy the following requirements:

- 1) it is under *official veterinary control*;
- 2) it is subjected to either a *vaccination* or a non-*vaccination* regime;
- 3) if a live vaccine is used in female cattle, *vaccination* should be carried out between three and six months of age, in which case these female cattle should be identified with a permanent mark;
- 4) all cattle over the age of one year are controlled as provided in point 4 of the definition of a *herd* of cattle officially free from bovine brucellosis; however, cattle under 30 months of age which have been vaccinated using a live vaccine before reaching six months of age, may be subjected to a buffered *Brucella* antigen test with a positive result, with the complement fixation test giving a negative result;
- 5) all cattle introduced into the *herd* come from a *herd* officially free from bovine brucellosis or from a *herd* free from bovine brucellosis, or from a country or *zone* free from bovine brucellosis. This condition may be waived for *animals* which have been isolated and which, prior to entry into the *herd*, were subjected to the serological tests for bovine brucellosis with negative results on two occasions, with an interval of 30 days between each test. These tests are not considered valid in female *animals* which have calved during the past 14 days.

Article 11.3.5.

Recommendations for the importation of cattle for breeding or rearing (except castrated males)

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

- 1) showed no clinical sign of bovine brucellosis on the day of shipment;
- 2) were kept in a *herd* in which no clinical sign of bovine brucellosis was officially reported during the six months prior to shipment;
- 3) were kept in a country or *zone* free from bovine brucellosis, or were from a *herd* officially free from bovine brucellosis and were subjected to a serological test for bovine brucellosis with negative results during the 30 days prior to shipment; or
- 4) were kept in a *herd* free from bovine brucellosis and were subjected to buffered *Brucella* antigen and complement fixation tests with negative results during the 30 days prior to shipment;

if the cattle come from a *herd* other than those mentioned above:

- 5) were isolated prior to shipment and were subjected to a serological test for bovine brucellosis with negative results on two occasions, with an interval of not less than 30 days between each test, the second test being performed during the 15 days prior to shipment. These tests are not considered valid in female *animals* which have calved during the past 14 days.

Article 11.3.6.

Recommendations for the importation of cattle for slaughter (except castrated males)

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

- 1) showed no clinical sign of bovine brucellosis on the day of shipment;
- 2) are not being eliminated as part of an eradication programme against bovine brucellosis;
- 3) were kept in a country or *zone* free from bovine brucellosis; or
- 4) were kept in a *herd* officially free from bovine brucellosis; or
- 5) were kept in a *herd* free from bovine brucellosis; or
- 6) were subjected to a serological test for bovine brucellosis with negative results during the 30 days prior to shipment.

Article 11.3.7.

Recommendations for the importation of bovine semen

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

- 1) when the semen is from an *artificial insemination centre*, the testing programme includes the buffered *Brucella* antigen and complement fixation tests;
- 2) when the semen is not from an *artificial insemination centre*, the donor *animals*:
 - a) were kept in a country or *zone* free from bovine brucellosis; or
 - b) were kept in a *herd* officially free from bovine brucellosis, showed no clinical sign of bovine brucellosis on the day of collection of the semen and were subjected to a buffered *Brucella* antigen test with negative results during the 30 days prior to collection; or
 - c) were kept in a *herd* free from bovine brucellosis, showed no clinical sign of bovine brucellosis on the day of collection and were subjected to the buffered *Brucella* antigen and complement fixation tests with negative results during the 30 days prior to collection;
- 3) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 11.3.8.

Recommendations for the importation of *in vivo* embryos/ova

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the embryos were collected, processed and stored in conformity with the provisions of Chapters 4.7. and 4.9., as relevant.

Article 11.3.9.

Recommendations for the importation of *in vitro* produced embryos/ova

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

- 1) the donor females:
 - a) were kept in a country or *zone* free from bovine brucellosis; or
 - b) were kept in a *herd* officially free from bovine brucellosis and were subjected to tests as prescribed in Chapter 1.3.;
 - 2) the oocytes were fertilised with semen meeting the conditions referred to in Chapters 4.5. and 4.6.;
 - 3) the embryos/oocytes were collected, processed and stored in conformity with the provisions of Chapters 4.8. and 4.9., as relevant.
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CHAPTER 11.4.

BOVINE GENITAL CAMPYLOBACTERIOSIS

Article 11.4.1.

General provisions

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

Article 11.4.2.

Recommendations for the importation of female bovines for breeding

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

- 1) the *animals* are virgin heifers; or
- 2) the *animals* were kept in a *herd* in which no *case* of bovine genital campylobacteriosis has been declared; and/or
- 3) for *animals* which have been mated, the culture of vaginal mucus for the presence of the causal agent of bovine genital campylobacteriosis proved negative.

Article 11.4.3.

Recommendations for the importation of bulls for breeding

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

- 1) the *animals*:
 - a) have never been used for natural service; or
 - b) have only mated virgin heifers; or
 - c) were kept in an *establishment* in which no *case* of bovine genital campylobacteriosis has been declared;
- 2) the semen and preputial specimen cultures and/or the associated tests for the presence of the causal agent of bovine genital campylobacteriosis were negative.

Article 11.4.4.

Recommendations for the importation of bovine semen

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

- 1) the donor *animals*:
 - a) have never been used for natural service; or
 - b) have only mated virgin heifers; or

- c) were kept in an *establishment* or *artificial insemination centre* where no case of bovine genital campylobacteriosis has been reported;
- 2) the culture of semen and preputial specimens for the presence of the causal agent of bovine genital campylobacteriosis proved negative.
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CHAPTER 11.5.

BOVINE SPONGIFORM ENCEPHALOPATHY

Article 11.5.1.

General provisions and safe commodities

The recommendations in this chapter are intended to manage the human and animal health risks associated with the presence of the bovine spongiform encephalopathy (BSE) agent in cattle (*Bos taurus* and *B. indicus*) only.

- 1) When authorising import or transit of the following *commodities* and any products made from these *commodities* and containing no other tissues from cattle, *Veterinary Authorities* should not require any BSE related conditions, regardless of the BSE risk status of the cattle population of the *exporting country, zone or compartment*:
 - a) *milk and milk products*;
 - b) semen and *in vivo* derived cattle embryos collected and handled in accordance with the recommendations of the International Embryo Transfer Society;
 - c) hides and skins;
 - d) gelatine and collagen prepared exclusively from hides and skins;
 - e) tallow with maximum level of insoluble impurities of 0.15 percent in weight and derivatives made from this tallow;
 - f) dicalcium phosphate (with no trace of protein or fat);
 - g) deboned skeletal muscle meat (excluding mechanically separated meat) from cattle which were not subjected to a stunning process prior to *slaughter*, with a device injecting compressed air or gas into the cranial cavity or to a pithing process, and which passed ante- and post-mortem inspections and which has been prepared in a manner to avoid contamination with tissues listed in Article 11.5.14.;
 - h) blood and blood by-products, from cattle which were not subjected to a stunning process, prior to *slaughter*, with a device injecting compressed air or gas into the cranial cavity, or to a pithing process.
- 2) 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 BSE risk status of the cattle population of the *exporting country, zone or compartment*.
- 3) When authorising import of *commodities* according to the conditions prescribed in this chapter, the risk status of an *importing country* is not affected by the BSE risk status of the *exporting country, zone or compartment*.

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

Article 11.5.2.

The BSE risk status of the cattle population of a country, zone or compartment

The BSE risk status of the cattle population of a country, *zone or compartment* should be determined on the basis of the following criteria:

- 1) the outcome of a *risk assessment*, based on the provisions of the *Terrestrial Code*, identifying all potential factors for BSE occurrence and their historic perspective. Members should review the *risk assessment* annually to determine whether the situation has changed.

a) Release assessment

Release assessment consists of assessing, through consideration of the following, the likelihood that the BSE agent has either been introduced into the country, *zone* or *compartment* via *commodities* potentially contaminated with it, or is already present in the country, *zone* or *compartment*:

- i) the presence or absence of the BSE agent in the indigenous ruminant population of the country, *zone* or *compartment* and, if present, evidence regarding its prevalence;
- ii) production of *meat-and-bone meal* or *greaves* from the indigenous ruminant population;
- iii) imported *meat-and-bone meal* or *greaves*;
- iv) imported cattle, sheep and goats;
- v) imported animal feed and feed ingredients;
- vi) imported products of ruminant origin for human consumption, which may have contained tissues listed in Article 11.5.14. and may have been fed to cattle;
- vii) imported products of ruminant origin intended for *in vivo* use in cattle.

The results of *surveillance* and other epidemiological investigations into the disposition of the *commodities* identified above should be taken into account in carrying out the assessment.

b) Exposure assessment

If the release assessment identifies a *risk* factor, an exposure assessment should be conducted, consisting of assessing the likelihood of cattle being exposed to the BSE agent, through a consideration of the following:

- i) recycling and amplification of the BSE agent through consumption by cattle of *meat-and-bone meal* or *greaves* of ruminant origin, or other feed or feed ingredients contaminated with these;
 - ii) the use of ruminant carcasses (including from fallen stock), by-products and slaughterhouse waste, the parameters of the rendering processes and the methods of animal feed manufacture;
 - iii) the feeding or not of ruminants with *meat-and-bone meal* and *greaves* derived from ruminants, including measures to prevent cross-contamination of animal feed;
 - iv) the level of *surveillance* for BSE conducted on the cattle population up to that time and the results of that *surveillance*;
- 2) on-going awareness programme for veterinarians, farmers, and workers involved in transportation, marketing and *slaughter* of cattle to encourage reporting of all *cases* showing clinical signs consistent with BSE in target sub-populations as defined in Articles 11.5.20. to 11.5.22.;
 - 3) the compulsory notification and investigation of all cattle showing clinical signs consistent with BSE;
 - 4) the examination carried out in accordance with the *Terrestrial Manual* in a *laboratory* of brain or other tissues collected within the framework of the aforementioned *surveillance* and monitoring system.

When the *risk assessment* demonstrates negligible risk, the Member should conduct Type B *surveillance* in accordance with Articles 11.5.20. to 11.5.22.

When the *risk assessment* fails to demonstrate negligible risk, the Member should conduct Type A *surveillance* in accordance with Articles 11.5.20. to 11.5.22.

Article 11.5.3.

Negligible BSE risk

Commodities from the cattle population of a country, *zone* or *compartment* pose a negligible risk of transmitting the BSE agent if the following conditions are met:

- 1) a *risk assessment*, as described in point 1 of Article 11.5.2., has been conducted in order to identify the historical and existing risk factors, and the Member has demonstrated that appropriate specific measures have been taken for the relevant period of time defined below to manage each identified risk;
- 2) the Member has demonstrated that Type B *surveillance* in accordance with Articles 11.5.20. to 11.5.22. is in place and the relevant points target, in accordance with Table 1, has been met;
- 3) EITHER:
 - a) there has been no case of BSE or, if there has been a case, every case of BSE has been demonstrated to have been imported and has been completely destroyed, and
 - i) the criteria in points 2 to 4 of Article 11.5.2. have been complied with for at least seven years; and
 - ii) it has been demonstrated through an appropriate level of control and audit, including that of cross contamination, that for at least eight years neither *meat-and-bone meal* nor *greaves* derived from ruminants has been fed to ruminants;

OR

- b) if there has been an indigenous case, every indigenous case was born more than 11 years ago; and
 - i) the criteria in points 2 to 4 of Article 11.5.2. have been complied with for at least seven years; and
 - ii) it has been demonstrated through an appropriate level of control and audit, including that of cross contamination, that for at least eight years neither *meat-and-bone meal* nor *greaves* derived from ruminants has been fed to ruminants;
 - iii) all BSE cases, as well as:
 - all cattle which, during their first year of life, were reared with the BSE cases during their first year of life, and which investigation showed consumed the same potentially contaminated feed during that period, or
 - if the results of the investigation are inconclusive, all cattle born in the same *herd* as, and within 12 months of the birth of, the BSE cases,

if alive in the country, *zone* or *compartment*, are permanently identified, and their movements controlled, and, when slaughtered or at death, are completely destroyed.

The Member or *zone* will be included in the list of negligible risk only after the submitted evidence has been accepted by the OIE. Retention on the list requires that the information for the previous 12 months on *surveillance* results and feed controls 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 11.5.4.

Controlled BSE risk

Commodities from the cattle population of a country, *zone* or *compartment* pose a controlled risk of transmitting the BSE agent if the following conditions are met:

- 1) a *risk assessment*, as described in point 1 of Article 11.5.2., has been conducted in order to identify the historical and existing risk factors, and the Member has demonstrated that appropriate measures are being taken to manage all identified risks, but these measures have not been taken for the relevant period of time;

- 2) the Member has demonstrated that Type A *surveillance* in accordance with Articles 11.5.20. to 11.5.22. has been carried out and the relevant points target, in accordance with Table 1, has been met; Type B *surveillance* may replace Type A *surveillance* once the relevant points target is met;
- 3) EITHER:
- a) there has been no *case* of BSE or, if there has been a *case*, every *case* of BSE has been demonstrated to have been imported and has been completely destroyed, the criteria in points 2 to 4 of Article 11.5.2. are complied with, and it can be demonstrated through an appropriate level of control and audit, including that of cross contamination, that neither *meat-and-bone meal* nor *greaves* derived from ruminants has been fed to ruminants, but at least one of the following two conditions applies:
- i) the criteria in points 2 to 4 of Article 11.5.2. have not been complied with for seven years;
- ii) it cannot be demonstrated that controls over the feeding of *meat-and-bone meal* or *greaves* derived from ruminants to ruminants have been in place for eight years;

OR

- b) there has been an indigenous *case* of BSE, the criteria in points 2 to 4 of Article 11.5.2. are complied with, and it can be demonstrated through an appropriate level of control and audit, including that of cross contamination, that neither *meat-and-bone meal* nor *greaves* derived from ruminants has been fed to ruminants;

and all BSE *cases*, as well as:

- all cattle which, during their first year of life, were reared with the BSE *cases* during their first year of life, and which investigation showed consumed the same potentially contaminated feed during that period, or
- if the results of the investigation are inconclusive, all cattle born in the same *herd* as, and within 12 months of the birth of, the BSE *cases*,

if alive in the country, *zone* or *compartment*, are permanently identified, and their movements controlled, and, when slaughtered or at death, are completely destroyed.

The Member or *zone* will be included in the list of controlled risk only after the submitted evidence has been accepted by the OIE. Retention on the list requires that the information for the previous 12 months on *surveillance* results and feed controls 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 11.5.5.

Undetermined BSE risk

The cattle population of a country, *zone* or *compartment* poses an undetermined BSE risk if it cannot be demonstrated that it meets the requirements of another category.

Article 11.5.6.

Recommendations for the importation of bovine commodities from a country, zone or compartment posing a negligible BSE risk

For all commodities from cattle not listed in point 1 of Article 11.5.1.

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the country, *zone* or *compartment* complies with the conditions in Article 11.5.3.

Article 11.5.7.

Recommendations for the importation of cattle from a country, zone or compartment posing a negligible BSE risk but where there has been an indigenous caseFor cattle selected for export

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

- 1) are identified by a permanent identification system in such a way as to demonstrate that they are not exposed cattle as described in point 3b)iii) of Article 11.5.3.;
- 2) were born after the date from which the ban on the feeding of ruminants with *meat-and-bone meal* and *greaves* derived from ruminants had been effectively enforced.

Article 11.5.8.

Recommendations for the importation of cattle from a country, zone or compartment posing a controlled BSE riskFor cattle

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

- 1) the country, *zone* or *compartment* complies with the conditions referred to in Article 11.5.4.;
- 2) cattle selected for export are identified by a permanent identification system in such a way as to demonstrate that they are not exposed cattle as described in point 3b) of Article 11.5.4.;
- 3) cattle selected for export were born after the date from which the ban on the feeding of ruminants with *meat-and-bone meal* and *greaves* derived from ruminants was effectively enforced.

Article 11.5.9.

Recommendations for the importation of cattle from a country, zone or compartment posing an undetermined BSE riskFor cattle

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

- 1) the feeding of ruminants with *meat-and-bone meal* and *greaves* derived from ruminants has been banned and the ban has been effectively enforced;
- 2) all BSE cases, as well as:
 - a) all cattle which, during their first year of life, were reared with the BSE cases during their first year of life, and, which investigation showed consumed the same potentially contaminated feed during that period, or
 - b) if the results of the investigation are inconclusive, all cattle born in the same *herd* as, and within 12 months of the birth of, the BSE cases,

if alive in the country, *zone* or *compartment*, are permanently identified, and their movements controlled, and, when slaughtered or at death, are completely destroyed;

- 3) cattle selected for export:
 - a) are identified by a permanent identification system in such a way as to demonstrate that they are not exposed cattle as demonstrated in point 2 above;
 - b) were born at least two years after the date from which the ban on the feeding of ruminants with *meat-and-bone meal* and *greaves* derived from ruminants was effectively enforced.

Article 11.5.10.

Recommendations for the importation of meat and meat products from a country, zone or compartment posing a negligible BSE risk

For fresh meat and meat products from cattle (other than those listed in point 1 of Article 11.5.1.)

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

- 1) the country, *zone* or *compartment* complies with the conditions in Article 11.5.3.;
- 2) the cattle from which the *fresh meat* and *meat products* were derived passed ante- and post-mortem inspections;
- 3) in countries with negligible BSE risk where there have been indigenous cases, the cattle from which the *fresh meat* and *meat products* were derived were born after the date from which the ban on the feeding of ruminants with *meat-and-bone meal* and *greaves* derived from ruminants had been effectively enforced.

Article 11.5.11.

Recommendations for the importation of meat and meat products from a country, zone or compartment posing a controlled BSE risk

For fresh meat and meat products from cattle (other than those listed in point 1 of Article 11.5.1.)

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

- 1) the country, *zone* or *compartment* complies with the conditions referred to in Article 11.5.4.;
- 2) the cattle from which the *fresh meat* and *meat products* were derived passed ante- and post-mortem inspections;
- 3) cattle from which the *fresh meat* and *meat products* destined for export were derived were not subjected to a stunning process, prior to *slaughter*, with a device injecting compressed air or gas into the cranial cavity, or to a pithing process;
- 4) the *fresh meat* and *meat products* were produced and handled in a manner which ensures that such products do not contain and are not contaminated with:
 - a) the tissues listed in points 1 and 2 of Article 11.5.14.,
 - b) mechanically separated meat from the skull and vertebral column from cattle over 30 months of age.

Article 11.5.12.

Recommendations for the importation of meat and meat products from a country, zone or compartment posing an undetermined BSE risk

For fresh meat and meat products from cattle (other than those listed in point 1 of Article 11.5.1.)

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

- 1) the cattle from which the *fresh meat* and *meat products* originate:
 - a) have not been fed *meat-and-bone meal* or *greaves* derived from ruminants;
 - b) passed ante- and post-mortem inspections;
 - c) were not subjected to a stunning process, prior to *slaughter*, with a device injecting compressed air or gas into the cranial cavity, or to a pithing process;

- 2) the *fresh meat* and *meat products* were produced and handled in a manner which ensures that such products do not contain and are not contaminated with:
 - a) the tissues listed in points 1 and 3 of Article 11.5.14.,
 - b) nervous and lymphatic tissues exposed during the deboning process,
 - c) mechanically separated meat from the skull and vertebral column from cattle over 12 months of age.

Article 11.5.13.

Recommendations on ruminant-derived meat-and-bone meal or greaves

- 1) Ruminant-derived *meat-and-bone meal* or *greaves*, or any commodities containing such products, which originate from a country, *zone* or *compartment* defined in Article 11.5.3., but where there has been an indigenous case of BSE, should not be traded if such products were derived from cattle born before the date from which the ban on the feeding of ruminants with *meat-and-bone meal* and *greaves* derived from ruminants had been effectively enforced.
- 2) Ruminant-derived *meat-and-bone meal* or *greaves*, or any commodities containing such products, which originate from a country, *zone* or *compartment* defined in Articles 11.5.4. and 11.5.5. should not be traded between countries.

Article 11.5.14.

Recommendations on commodities that should not be traded

- 1) From cattle of any age originating from a country, *zone* or *compartment* defined in Articles 11.5.4. and 11.5.5., the following commodities, and any commodity contaminated by them, should not be traded for the preparation of food, feed, fertilisers, cosmetics, pharmaceuticals including biologicals, or medical devices: tonsils and distal ileum. Protein products, food, feed, fertilisers, cosmetics, pharmaceuticals or medical devices prepared using these commodities (unless covered by other Articles in this chapter) should also not be traded.
- 2) From cattle that were at the time of *slaughter* over 30 months of age originating from a country, *zone* or *compartment* defined in Article 11.5.4., the following commodities, and any commodity contaminated by them, should not be traded for the preparation of food, feed, fertilisers, cosmetics, pharmaceuticals including biologicals, or medical devices: brains, eyes, spinal cord, skull and vertebral column. Protein products, food, feed, fertilisers, cosmetics, pharmaceuticals or medical devices prepared using these commodities (unless covered by other Articles in this chapter) should also not be traded.
- 3) From cattle that were at the time of *slaughter* over 12 months of age originating from a country, *zone* or *compartment* defined in Article 11.5.5., the following commodities, and any commodity contaminated by them, should not be traded for the preparation of food, feed, fertilisers, cosmetics, pharmaceuticals including biologicals, or medical devices: brains, eyes, spinal cord, skull and vertebral column. Protein products, food, feed, fertilisers, cosmetics, pharmaceuticals or medical devices prepared using these commodities (unless covered by other Articles in this chapter) should also not be traded.

Article 11.5.15.

Recommendations for the importation of gelatine and collagen prepared from bones and intended for food or feed, cosmetics, pharmaceuticals including biologicals, or medical devices

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

- 1) the *commodities* came from a country, *zone* or *compartment* posing a negligible BSE risk;

OR

- 2) they originate from a country, *zone* or *compartment* posing a controlled or undetermined BSE risk and are derived from cattle which have passed ante- and post-mortem inspections; and that
 - a) vertebral columns from cattle over 30 months of age at the time of *slaughter* and skulls have been excluded;
 - b) the bones have been subjected to a process which includes all of the following steps:
 - i) degreasing,
 - ii) acid demineralisation,
 - iii) acid or alkaline treatment,
 - iv) filtration,
 - v) sterilisation at $\geq 138^{\circ}\text{C}$ for a minimum of 4 seconds,or to an equivalent or better process in terms of infectivity reduction (such as high pressure heating).

Article 11.5.16.

Recommendations for the importation of tallow (other than as defined in Article 11.5.1.) intended for food, feed, fertilisers, cosmetics, pharmaceuticals including biologicals, or medical devices

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

- 1) the tallow came from a country, *zone* or *compartment* posing a negligible BSE risk; or
- 2) it originates from a country, *zone* or *compartment* posing a controlled BSE risk, is derived from cattle which have passed ante- and post-mortem inspections, and has not been prepared using the tissues listed in points 1 and 2 of Article 11.5.14.

Article 11.5.17.

Recommendations for the importation of dicalcium phosphate (other than as defined in Article 11.5.1.) intended for food, feed, fertilisers, cosmetics, pharmaceuticals including biologicals, or medical devices

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

- 1) the dicalcium phosphate came from a country, *zone* or *compartment* posing a negligible BSE risk; or
- 2) it originates from a country, *zone* or *compartment* posing a controlled or undetermined BSE risk and is a by-product of bone gelatine produced according to Article 11.5.15.

Article 11.5.18.

Recommendations for the importation of tallow derivatives (other than those made from tallow as defined in Article 11.5.1.) intended for food, feed, fertilisers, cosmetics, pharmaceuticals including biologicals, or medical devices

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

- 1) the tallow derivatives originate from a country, *zone* or *compartment* posing a negligible BSE risk; or

- 2) they are derived from tallow meeting the conditions referred to in Article 11.5.16.; or
- 3) they have been produced by hydrolysis, saponification or transesterification using high temperature and pressure.

Article 11.5.19.

Procedures for the reduction of BSE infectivity in meat-and-bone meal

The following procedure should be used to reduce the infectivity of any transmissible spongiform encephalopathy agents which may be present during the production of *meat-and-bone meal* containing ruminant proteins.

- 1) The raw material should be reduced to a maximum particle size of 50 mm before heating.
- 2) The raw material should be heated under saturated steam conditions to a temperature of not less than 133°C for a minimum of 20 minutes at an absolute pressure of 3 bar.

Article 11.5.20.

Surveillance: introduction

- 1) Depending on the risk category of a country, *zone* or *compartment* with regard to bovine spongiform encephalopathy (BSE), *surveillance* for BSE may have one or more goals:
 - a) detecting BSE, to a pre-determined design prevalence, in a country, *zone* or *compartment*;
 - b) monitoring the evolution of BSE in a country, *zone* or *compartment*;
 - c) monitoring the effectiveness of a feed ban and/or other risk mitigation measures, in conjunction with auditing;
 - d) supporting a claimed BSE status;
 - e) gaining or regaining a higher BSE status.
- 2) When the BSE agent is present in a country or *zone*, the cattle population will comprise the following sectors, in order of decreasing size:
 - a) cattle not exposed to the infective agent;
 - b) cattle exposed but not infected;
 - c) infected cattle, which may lie within one of three stages in the progress of BSE:
 - i) the majority will die or be killed before reaching a stage at which BSE is detectable by current methods;
 - ii) some will progress to a stage at which BSE is detectable by testing before clinical signs appear;
 - iii) the smallest number will show clinical signs.
- 3) The BSE status of a country, *zone* or *compartment* cannot be determined only on the basis of a *surveillance* programme but should be determined in accordance with all the factors listed in Article 11.5.2. The *surveillance* programme should take into account the diagnostic limitations associated with the above sectors and the relative distributions of infected cattle among them.
- 4) With respect to the distribution and expression of the BSE agent within the sectors described above, the following four subpopulations of cattle have been identified for *surveillance* purposes:
 - a) cattle over 30 months of age displaying behavioural or clinical signs consistent with BSE (clinical suspects);

- b) cattle over 30 months of age that are non-ambulatory, recumbent, unable to rise or to walk without assistance; cattle over 30 months of age sent for emergency *slaughter* or condemned at ante-mortem inspection (casualty or emergency *slaughter* or downer cattle);
 - c) cattle over 30 months of age which are found dead or killed on farm, during transport or at an *abattoir* (fallen stock);
 - d) cattle over 36 months of age at routine *slaughter*.
- 5) A gradient is used to describe the relative value of *surveillance* applied to each subpopulation. *Surveillance* should focus on the first subpopulation, but investigation of other subpopulations will help to provide an accurate assessment of the BSE situation in the country, *zone* or *compartment*. This approach is consistent with Articles 11.5.20. to 11.5.22.
- 6) When establishing a *surveillance* strategy, authorities need to take into account the inherent difficulties of obtaining samples on farm, and overcome them. These difficulties include higher cost, the necessity to educate and motivate owners, and counteracting potentially negative socio-economic implications.

Article 11.5.21.

Surveillance: description of cattle subpopulations

1. Cattle over 30 months of age displaying behavioural or clinical signs consistent with BSE (clinical suspects)

Cattle affected by illnesses that are refractory to treatment, and displaying progressive behavioural changes such as excitability, persistent kicking when milked, changes in *herd* hierarchical status, hesitation at doors, gates and barriers, as well as those displaying progressive neurological signs without signs of infectious illness are candidates for examination. These behavioural changes, being very subtle, are best identified by those who handle *animals* on a daily basis. Since BSE causes no pathognomonic clinical signs, all Members with cattle populations will observe individual *animals* displaying clinical signs consistent with BSE. It should be recognised that *cases* may display only some of these signs, which may also vary in severity, and such *animals* should still be investigated as potential BSE affected *animals*. The rate at which such suspicious *cases* are likely to occur will differ among epidemiological situations and cannot therefore be predicted reliably.

This subpopulation is the one exhibiting the highest prevalence. The accurate recognition, reporting and classification of such *animals* will depend on the ongoing owner/veterinarian awareness programme. This and the quality of the investigation and *laboratory* examination systems (Article 11.5.2.), implemented by the *Veterinary Services*, are essential for the credibility of the *surveillance* system.

2. Cattle over 30 months of age that are non-ambulatory, recumbent, unable to rise or to walk without assistance; cattle over 30 months of age sent for emergency slaughter or condemned at ante-mortem inspection (casualty or emergency slaughter, or downer cattle)

These cattle may have exhibited some of the clinical signs listed above which were not recognised as being consistent with BSE. Experience in Members where BSE has been identified indicates that this subpopulation is the one demonstrating the second highest prevalence. For that reason, it is the second most appropriate population to target in order to detect BSE.

3. Cattle over 30 months of age which are found dead or killed on farm, during transport or at an abattoir (fallen stock)

These cattle may have exhibited some of the clinical signs listed above prior to death, but were not recognised as being consistent with BSE. Experience in Members where BSE has been identified indicates that this subpopulation is the one demonstrating the third highest prevalence.

4. Cattle over 36 months of age at routine slaughter

Experience in Members where BSE has been identified indicates that this subpopulation is the one demonstrating the lowest prevalence. For that reason, it is the least appropriate population to target in order to detect BSE. However, sampling in this subpopulation may be an aide in monitoring the progress of the

epizootic and the efficacy of control measures applied, because it offers continuous access to a cattle population of known class, age structure and geographical origin. Testing of routine slaughter cattle 36 months of age or less is of relatively very little value (Table 2).

Article 11.5.22.

Surveillance activities

In order to implement efficiently a *surveillance* strategy for BSE, a Member should use documented records or reliable estimates of the age distribution of the adult cattle population and the number of cattle tested for BSE stratified by age and by subpopulation within the country, *zone* or *compartment*.

The approach assigns 'point values' to each sample, based on the subpopulation from which it was collected and the likelihood of detecting infected cattle in that subpopulation. The number of points a sample is assigned is determined by the subpopulation from which the sample is collected and the age of the animal sampled. The total points accumulation is then periodically compared to the target number of points for a country, *zone* or *compartment*.

A *surveillance* strategy should be designed to ensure that samples are representative of the *herd* of the country, *zone* or *compartment*, and include consideration of demographic factors such as production type and geographic location, and the potential influence of culturally unique husbandry practices. The approach used and the assumptions made should be fully documented, and the documentation retained for seven years.

The points targets and *surveillance* point values in this chapter were obtained by applying the following factors to a statistical model:

- 1) the design prevalence for Type A or Type B *surveillance*;
- 2) a confidence level of 95 percent;
- 3) the pathogenesis, and pathological and clinical expression of BSE:
 - a) sensitivity of diagnostic methods used;
 - b) relative frequency of expression by age;
 - c) relative frequency of expression within each subpopulation;
 - d) interval between pathological change and clinical expression;
- 4) demographics of the cattle population, including age distribution;
- 5) influence of BSE on culling or attrition of *animals* from the cattle population via the four subpopulations;
- 6) percentage of infected *animals* in the cattle population which are not detected.

Although the procedure accepts very basic information about a cattle population, and can be used with estimates and less precise data, careful collection and documentation of the data significantly enhance their value. Since samples from clinical suspect *animals* provide many times more information than samples from healthy or dead-of-unknown-cause *animals*, careful attention to the input data can substantially decrease the procedure's cost and the number of samples needed. The essential input data are:

- 7) cattle population numbers stratified by age;
- 8) the number of cattle tested for BSE stratified by age and by subpopulation.

This chapter utilises Tables 1 and 2 to determine a desired *surveillance* points target and the point values of *surveillance* samples collected.

Within each of the subpopulations above in a country, *zone* or *compartment*, a Member may wish to target cattle identifiable as imported from countries or *zones* not free from BSE and cattle which have consumed potentially contaminated feedstuffs from countries or *zones* not free from BSE.

All clinical suspects should be investigated, regardless of the number of points accumulated. In addition, *animals* from the other subpopulations should be tested.

1. Type A surveillance

The application of Type A *surveillance* will allow the detection of BSE around a design prevalence of at least one case per 100,000 in the adult cattle population in the country, *zone* or *compartment* of concern, at a confidence level of 95 percent.

2. Type B surveillance

The application of Type B *surveillance* will allow the detection of BSE around a design prevalence of at least one case per 50,000 in the adult cattle population in the country, *zone* or *compartment* of concern, at a confidence level of 95 percent.

Type B *surveillance* may be carried out by countries, *zones* or *compartments* of negligible BSE risk status (Article 11.5.3.) to confirm the conclusions of the *risk assessment*, for example by demonstrating the effectiveness of the measures mitigating any risk factors identified, through *surveillance* targeted to maximise the likelihood of identifying failures of such measures.

Type B *surveillance* may also be carried out by countries, *zones* or *compartments* of controlled BSE risk status (Article 11.5.4.), following the achievement of the relevant points target using Type A *surveillance*, to maintain confidence in the knowledge gained through Type A *surveillance*.

3. Selecting the points target

The *surveillance* points target should be selected from Table 1, which shows target points for adult cattle populations of different sizes. The size of the adult cattle population of a country, *zone* or *compartment* may be estimated or may be set at one million because, for statistical reasons, one million is the point beyond which sample size does not further increase with population size.

Table 1. Points targets for different adult cattle population sizes in a country, zone or compartment.

Points targets for country, zone or compartment		
Adult cattle population size (24 months and older)	Type A surveillance	Type B surveillance
≥1,000,000	300,000	150,000
800,000-1,000,000	240,000	120,000
600,000-800,000	180,000	90,000
400,000-600,000	120,000	60,000
200,000-400,000	60,000	30,000
100,000-200,000	30,000	15,000
50,000-100,000	15,000	7,500
25,000 -50,000	7,500	3,750

4. Determining the point values of samples collected

Table 2 can be used to determine the point values of the *surveillance* samples collected. The approach assigns point values to each sample according to the likelihood of detecting *infection* based on the subpopulation from which the sample was collected and the age of the animal sampled. This approach takes into account the general principles of *surveillance* described in Chapter 1.4. and the epidemiology of BSE.

Because precise aging of the *animals* that are sampled may not be possible, Table 2 combines point values into five age categories. The point estimates for each category were determined as an average for the age range comprising the group. The age groups were selected on their relative likelihoods of expressing BSE

according to scientific knowledge of the incubation of the *disease* and the world BSE experience. Samples may be collected from any combination of subpopulations and ages but should reflect the demographics of the cattle *herd* of the country, *zone* or *compartment*. In addition, Members should sample at least three of the four subpopulations.

Table 2. Surveillance point values for samples collected from animals in the given subpopulation and age category.

Surveillance subpopulation			
Routine slaughter ¹	Fallen stock ²	Casualty slaughter ³	Clinical suspect ⁴
Age \geq 1 year and <2 years			
0.01	0.2	0.4	N/A
Age \geq 2 year and <4 years (young adult)			
0.1	0.2	0.4	260
Age \geq 4 year and <7 years (middle adult)			
0.2	0.9	1.6	750
Age \geq 7 year and <9 years (older adult)			
0.1	0.4	0.7	220
Age \geq 9 year and <2 years (aged)			
0.0	0.1	0.2	45

If a country, *zone* or *compartment* determines, based on the demographics and epidemiological characteristics of its cattle population, that precise classification of the subpopulations 'casualty or emergency slaughter, or downer cattle' and 'fallen stock' is not possible, these subpopulations may be combined. In such a case, the *surveillance* point values accorded to the combined subpopulation would be that of 'fallen stock'.

The total points for samples collected may be accumulated over a period of a maximum of seven consecutive years to achieve the target number of points determined in Table 1.

Surveillance points remain valid for seven years (the 95th percentile of the incubation period).

Article 11.5.23.

BSE risk assessment: introduction

The first step in determining the BSE risk status of the cattle population of a country or *zone* is to conduct a *risk assessment* (reviewed annually), based on Section 2. of this *Terrestrial Code*, identifying all potential factors for BSE occurrence and their historic perspective.

1. Release assessment

Release assessment consists of assessing the likelihood that a BSE agent has been introduced via the importation of the following *commodities* potentially contaminated with a BSE agent:

- a) *meat-and-bone meal* or *greaves*;
- b) *live animals*;
- c) *animal feed* and *feed ingredients*;

d) products of animal origin for human consumption.

2. Exposure assessment

Exposure assessment consists of assessing the likelihood of exposure of the BSE agent to cattle, through a consideration of the following:

- a) epidemiological situation concerning BSE agents in the country or *zone*;
- b) recycling and amplification of the BSE agent through consumption by cattle of *meat-and-bone meal* or *greaves* of ruminant origin, or other feed or feed ingredients contaminated with these;
- c) the origin and use of ruminant carcasses (including fallen stock), by-products and *slaughterhouse* waste, the parameters of the rendering processes and the methods of animal feed manufacture;
- d) implementation and enforcement of feed bans, including measures to prevent cross-contamination of animal feed; thorough epidemiological investigations of any indigenous case born after the date of the implementation of feed bans should be conducted.

The following recommendations are intended to assist *Veterinary Services* in conducting such a *risk assessment*. They provide guidance on the issues that need to be addressed when conducting a country-based assessment of BSE risk. They apply equally to self-assessment in preparation of dossiers for categorisation of countries. The recommendations are supported by greater detail in the questionnaire used for the submission of data for country assessment.

Article 11.5.24.

The potential for the release of the BSE agent through the importation of meat-and-bone meal or greaves

This point is irrelevant if the exposure assessment outlined below in Article 11.5.27. indicates that *meat-and-bone meal* or *greaves* has not been fed, either deliberately or accidentally, in the past eight years. Nevertheless, documentation should be provided on the control systems (including relevant legislation) in place to ensure that *meat-and-bone meal* or *greaves* has not been fed to ruminants.

Assumption: That *meat-and-bone meal* or *greaves* of ruminant origin plays the only significant role in BSE transmission.

Question to be answered: Has *meat-and-bone meal*, *greaves*, or feedstuffs containing either been imported within the past eight years? If so, where from and in what quantities?

Rationale: Knowledge of the origin of *meat-and-bone meal*, *greaves* or feedstuffs containing either *meat-and-bone meal* or *greaves*, is necessary to assess the risk of release of BSE agent. *Meat-and-bone meal* and *greaves* originating in countries of high BSE risk pose a higher release risk than that from low risk countries. *Meat-and-bone meal* and *greaves* originating in countries of unknown BSE risk pose an unknown release risk.

Evidence required:

- Documentation to support claims that *meat-and-bone meal*, *greaves* or feedstuffs containing either *meat-and-bone meal* or *greaves* have not been imported, OR
- Where *meat-and-bone meal*, *greaves* or feedstuffs containing them have been imported, documentation of country of origin and, if different, the country of export.
- Documentation on annual volume, by country of origin, of *meat*, *greaves* or feedstuffs containing them imported during the past eight years.
- Documentation describing the composition (on a species and class of stock basis) of the imported *meat-and-bone meal*, *greaves* or feedstuffs containing them.
- Documentation, from the country of production, supporting why the rendering processes used to produce *meat-and-bone meal*, *greaves* or feedstuffs containing them would have inactivated, or significantly reduced the titre of BSE agent, should it be present.

- Documentation describing the fate of imported *meat-and-bone meal* and *greaves*.

Article 11.5.25.

The potential for the release of the BSE agent through the importation of live animals potentially infected with BSE*Assumptions:*

- Countries which have imported ruminants from countries infected with BSEs are more likely to experience BSE.
- Cattle pose the only known risk although other species are under study.
- *Animals* imported for breeding may pose a greater risk than *animals* imported for *slaughter* because of the hypothetical risk of maternal transmission and because they are kept to a greater age than *animals* imported for *slaughter*.
- Risk is influenced by the date at which imports occurred, relative to the BSE status of the country of origin.
- Risk is proportional to volume of imports (Article 2.1.3.).

Question to be answered: Have live *animals* been imported within the past seven years?

Rationale: The release risks are dependent on:

- country of origin and its BSE status, which will change as more data become available; this may result from the detection of clinical *disease*, or following active *surveillance*, or assessment of geographical BSE risk;
- feeding and management of the *animals* in the country of origin;
- use to which the *commodity* has been put as apart from representing risk of developing clinical *disease*, the *slaughter*, rendering and recycling in *meat-and-bone meal* of imported *animals* represents a potential route of exposure of indigenous livestock even if *meat-and-bone meal* and *greaves*, or feedstuffs containing them, have not been imported;
- species;
- dairy versus meat breeds, where there are differences in exposure in the country of origin because feeding practices result in greater exposure of one category;
- age at *slaughter*.

Evidence required:

- Documentation on the country of origin of imports. This should identify the country of breeding of *animals*, the length of time they lived in that country and of any other country in which they have resided during their lifetime.
- Documentation describing origins, species and volume of imports.
- Documentation describing the fate of imported *animals*, including their age at *slaughter*.
- Documentation demonstrating that risks are periodically reviewed in light of evolving knowledge on the BSE status of the country of origin.

Article 11.5.26.

The potential for the release of the BSE agent through the importation of products of animal origin potentially infected with BSE

Assumptions:

- Semen, embryos, hides and skins or milk are not considered to play a role in the transmission of BSE.

- Countries which have imported products of animal origin from countries with BSEs are more likely to experience BSE.
- Risk is influenced by the date at which imports occurred, relative to the BSE status of the country of origin.
- Risk is proportional to volume of imports (Article 2.1.3.).

Question to be answered: What products of animal origin have been imported within the past seven years?

Rationale: The release risks are dependent on:

- the species of origin of the animal products and whether these products contain tissues known to contain BSE infectivity (Article 11.5.14.);
- country of origin and its BSE status, which will change as more data become available; this may result from the detection of clinical *disease*, or following active *surveillance*, or assessment of geographical BSE risk;
- feeding and management of the *animals* in the country of origin;
- use to which the *commodity* has been put as apart from representing risk of developing clinical *disease*, the *slaughter*, rendering and recycling in *meat-and-bone meal* of imported *animals* represents a potential route of exposure of indigenous livestock even if *meat-and-bone meal* and *greaves*, or feedstuffs containing them, have not been imported;
- species;
- dairy versus meat breeds, where there are differences in exposure in the country of origin because feeding practices result in greater exposure of one category;
- age at *slaughter*.

Evidence required:

- Documentation on the country of origin of imports. This should identify the country of breeding of *animals*, the length of time they lived in that country and of any other country in which they have resided during their lifetime.
- Documentation describing origins, species and volume of imports.
- Documentation describing the end use of imported animal products, and the disposal of waste.
- Documentation demonstrating that risks are periodically reviewed in light of evolving knowledge on the BSE status of the country of origin.

Article 11.5.27.

The potential for the exposure of cattle to the BSE agent through consumption of meat-and-bone meal or greaves of ruminant origin

Assumptions:

- That the consumption by bovines of *meat-and-bone meal* or *greaves* of ruminant origin plays the only significant role in BSE transmission.
- That commercially-available products of animal origin used in animal feeds may contain *meat-and-bone meal* or *greaves* of ruminant origin.
- Milk and blood are not considered to play a role in the transmission of BSE.

Question to be answered: Has *meat-and-bone meal* or *greaves* of ruminant origin been fed to cattle within the past eight years (see Articles 11.5.3. and 11.5.4.)?

Rationale: If cattle have not been fed products of animal origin (other than milk or blood) potentially containing *meat-and-bone meal* or *greaves* of ruminant origin within the past eight years, *meat-and-bone meal* and *greaves* can be dismissed as a risk.

Article 11.5.28.

The origin of animal waste, the parameters of the rendering processes and the methods of animal feed production

Assumptions:

- BSE has a long *incubation period* and insidious onset of signs, so cases may escape detection.
- Pre-clinical BSE infectivity cannot reliably be detected by any method and may enter rendering, in particular if specified risk materials are not removed.
- Tissues most likely to contain high titres of BSE infectivity (brain, spinal cord, eyes) may not be harvested for human consumption and may be rendered.
- BSE may manifest in sudden death, chronic disease, or recumbency, and may be presented as fallen stock or materials condemned as unfit for human consumption.
- BSE agent survival in rendering is affected by the method of processing. Adequate rendering processes are described in Article 11.5.19.
- BSE agent is present at much higher titres in central nervous system and reticulo-endothelial tissues (so-called 'Specified Risk Materials', or SRM).

Question to be answered: How has animal waste been processed over the past eight years?

Rationale: If potentially infected *animals* or contaminated materials are rendered, there is a risk that the resulting *meat-and-bone meal* could retain BSE infectivity.

Where *meat-and-bone meal* is utilized in the production of any animal feeds, the risk of cross-contamination exists.

Evidence required:

- Documentation describing the collection and disposal of fallen stock and materials condemned as unfit for human consumption.
- Documentation describing the definition and disposal of specified risk material, if any.
- Documentation describing the rendering process and parameters used to produce *meat-and-bone meal* and *greaves*.
- Documentation describing methods of animal feed production, including details of ingredients used, the extent of use of *meat-and-bone meal* in any livestock feed, and measures that prevent cross-contamination of cattle feed with ingredients used in monogastric feed.
- Documentation describing monitoring and enforcement of the above.

Article 11.5.29.

Conclusions of the risk assessment

The overall risk of BSE in the cattle population of a country or *zone* is proportional to the level of known or potential exposure to BSE infectivity and the potential for recycling and amplification of the infectivity through livestock feeding practices. For the *risk assessment* to conclude that the cattle population of a country or *zone* is free from BSE risk, it should have demonstrated that appropriate measures have been taken to manage any risks identified.

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- 1 See point 4) of Article 11.6.21.
 - 2 See point 3) of Article 11.6.21.
 - 3 See point 2) of Article 11.6.21.
 - 4 See point 1) of Article 11.6.21.

CHAPTER 11.6.

BOVINE TUBERCULOSIS

Article 11.6.1.

General provisions

The recommendations in this chapter are intended to manage the human and animal health risks associated with *Mycobacterium bovis* (*M. bovis*) infection in domestic (permanently captive and owned free-range) bovines including cattle (*Bos taurus*, *B. indicus* and *B. grunniens*), water buffaloes (*Bubalus bubalis*) and wood bisons (*Bison bison* and *B. bonasus*).

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

Article 11.6.2.

Country or zone free from bovine tuberculosis

To qualify as free from bovine tuberculosis, a country or *zone* should satisfy the following requirements:

- 1) *M. bovis* infection in domestic (permanently captive and owned free-range) bovines including cattle, water buffaloes and wood bisons is a *notifiable disease* in the country;
- 2) an on-going awareness programme should be in place to encourage reporting of all cases suggestive of bovine tuberculosis;
- 3) regular and periodic testing of all cattle, water buffalo and wood bison *herds* demonstrated that *M. bovis* infection was not present in at least 99.8 percent of the *herds* and 99.9 percent of the cattle, water buffaloes and wood bisons in the country or *zone* for three consecutive years;
- 4) a *surveillance* programme should be in place to detect bovine tuberculosis in the country or *zone* through ante- and post-mortem inspection as described in Chapter 6.2.;
- 5) if the *surveillance* programme described in points 3 and 4 above demonstrated that *M. bovis* infection was not present in at least 99.8 percent of the *herds* and 99.9 percent of the cattle, water buffaloes and wood bisons in the country or *zone* for five consecutive years, *surveillance* may be maintained through ante- and post-mortem inspection as described in Chapter 6.2.;
- 6) cattle, water buffaloes and wood bisons introduced into a country or *zone* free from bovine tuberculosis should be accompanied by a certificate from an *official veterinarian* attesting that they come from a country, *zone*, *compartment* or *herd* free from bovine tuberculosis or comply with the relevant provisions in Article 11.6.5. or in Article 11.6.6.

Article 11.6.3.

Compartment free from bovine tuberculosis

To qualify as a *compartment* free from bovine tuberculosis, all cattle, water buffaloes or wood bisons in a *compartment* should be certified by the *Veterinary Authority* as satisfying the following requirements:

- 1) the cattle, water buffaloes and wood bisons:
 - a) showed no sign of bovine tuberculosis or lesions at ante- or post-mortem inspection for at least three consecutive years;

- b) were over six weeks of age at the time of the first test and have shown a negative result to at least two tuberculin tests carried out at an interval of a minimum of six months, the first test being performed at least six months following the *slaughter* of the last affected *animal*;
- c) met one of the following conditions:
 - i) showed a negative result to twice yearly tuberculin test to ensure the continuing absence of bovine tuberculosis if the annual percentage of *herds* confirmed as infected with tuberculosis is more than 1 percent of all *herds* in the country or *zone* during the last two years; or
 - ii) showed a negative result to an annual tuberculin test to ensure the continuing absence of bovine tuberculosis if the annual percentage of *herds* confirmed as infected with tuberculosis is more than 0.2 percent but not more than 1 percent of all *herds* in the country or *zone* during the last two years; or
 - iii) showed a negative result to a tuberculin test every three years to ensure the continuing absence of bovine tuberculosis if the annual percentage of *herds* confirmed as infected with tuberculosis is not more than 0.2 percent of all *herds* in the country or *zone* during the last four years; or
 - iv) showed a negative result to a tuberculin test every four years to ensure the continuing absence of bovine tuberculosis if the annual percentage of *herds* confirmed as infected with tuberculosis is not more than 0.1 percent of all *herds* in the country or *zone* during the last six years;
- 2) cattle, water buffaloes and wood bison introduced into the *compartment* come from a *herd* free from bovine tuberculosis. This condition may be waived for *animals* which have been isolated for at least 90 days and which, prior to entry into the *compartment*, were subjected to at least two tuberculin tests carried out at a six-month interval with negative results with the second tuberculin test performed during the 30 days prior to entry into the *compartment*;
- 3) cattle, water buffaloes and wood bison in a *compartment* free from bovine tuberculosis are protected from contact with *wildlife* reservoirs of bovine tuberculosis and are managed under a common *biosecurity plan* protecting them from contamination with *M. bovis*, and the *compartment* has been approved by the *Veterinary Authority* in accordance with Chapters 4.3. and 4.4.

Article 11.6.4.

Herd free from bovine tuberculosis

To qualify as free from bovine tuberculosis, a *herd* of cattle, water buffaloes or wood bison should satisfy the following requirements:

- 1) the *herd* is in a country, *zone* or *compartment* free from bovine tuberculosis and is certified free by the *Veterinary Authority*; or
- 2) cattle, water buffaloes and wood bison in the *herd*:
 - a) showed no sign of bovine tuberculosis or lesions at ante- or post-mortem inspection for at least one year;
 - b) were over six weeks of age at the time of the first test and have shown a negative result to at least two tuberculin tests carried out at a minimal interval of six months; in case of regaining of free status after an *outbreak*, the first test should be performed at least six months following the *slaughter* of the last affected *animal*;
 - c) to maintain the free status, met one of the following conditions:
 - i) showed a negative result to an annual tuberculin test to ensure the continuing absence of bovine tuberculosis; or
 - ii) showed a negative result to a tuberculin test every two years to ensure the continuing absence of bovine tuberculosis if the annual percentage of *herds* confirmed as infected with tuberculosis is not more than 1 percent of all *herds* in the country or *zone* during the last two years; or

- iii) showed a negative result to a tuberculin test every three years to ensure the continuing absence of bovine tuberculosis if the annual percentage of *herds* confirmed as infected with tuberculosis is not more than 0.2 percent of all *herds* in the country or *zone* during the last four years; or
 - iv) showed a negative result to a tuberculin test every four years to ensure the continuing absence of bovine tuberculosis if the annual percentage of *herds* confirmed as infected with tuberculosis is not more than 0.1 percent of all *herds* in the country or *zone* during the last six years;
- 3) cattle, water buffaloes and wood bison introduced into the *herd* come from a *herd* free from bovine tuberculosis. This condition may be waived for *animals* which have been isolated for at least 90 days and which, prior to entry into the *herd*, were subjected to at least two tuberculin tests carried out at a six-month interval with negative results with the second tuberculin test performed during the 30 days prior to entry into the *herd*.

Article 11.6.5.

Recommendations for the importation of cattle, water buffaloes and wood bison for breeding or rearing

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

- 1) showed no sign of bovine tuberculosis on the day of shipment;
- 2) originate from a *herd* free from bovine tuberculosis that is in a country, *zone* or *compartment* free from bovine tuberculosis; or
- 3) were subjected to the tuberculin test for bovine tuberculosis with negative results during the 30 days prior to shipment and come from a *herd* free from bovine tuberculosis; or
- 4) have been isolated for at least 90 days prior to entry into the *herd* including protection from contact with *wildlife* reservoirs of bovine tuberculosis and were subjected to at least two tuberculin tests carried out at a six-month interval with negative results with the second tuberculin test performed during the 30 days prior to entry into the *herd*.

Article 11.6.6.

Recommendations for the importation of cattle, water buffaloes and wood bison for slaughter

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

- 1) showed no sign of bovine tuberculosis on the day of shipment;
- 2) originated from a *herd* free from bovine tuberculosis or were subjected to a tuberculin test for bovine tuberculosis with negative results during the 30 days prior to shipment;
- 3) were not being eliminated as part of an eradication programme against bovine tuberculosis.

Article 11.6.7.

Recommendations for the importation of semen of cattle, water buffaloes and wood bison

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

- 1) the donor *animals* showed no sign of bovine tuberculosis on the day of collection of the semen and either:
 - a) were kept in an *artificial insemination centre* free from bovine tuberculosis in a country, *zone* or *compartment* free from bovine tuberculosis and which only accepts *animals* from free *herds* in a free country, *zone* or *compartment*; or

- b) showed negative results to tuberculin tests carried out annually and were kept in a *herd* free from bovine tuberculosis;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 11.6.8.

Recommendations for the importation of embryos/ova of cattle, water buffaloes and wood bison

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

- 1) the donor females and all other susceptible *animals* in the *herd* of origin showed no sign of bovine tuberculosis during the 24 hours prior to embryo collection; and either
 - a) originated from a *herd* free from bovine tuberculosis in a country, *zone* or *compartment* free from bovine tuberculosis; or
 - b) were kept in a *herd* free from bovine tuberculosis, and were subjected to a tuberculin test for bovine tuberculosis with negative results during an isolation period of 30 days in the *establishment* of origin prior to collection;
- 2) the embryos/ova were collected, processed and stored in conformity with the provisions of Chapters 4.7., 4.8. and 4.9., as relevant.

Article 11.6.9.

Recommendations for the importation of fresh meat and meat products of cattle, water buffaloes and wood bison

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 have been subjected to ante- and post-mortem inspections as described in Chapter 6.2.

Article 11.6.10.

Recommendations for the importation of milk and milk products of cattle, water buffaloes and wood bison

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

- 1) has been derived from *animals* in a *herd* free from bovine tuberculosis; or
 - 2) was subjected to pasteurization; or
 - 3) was subjected to a combination of control measures with equivalent performance as described in the Codex Alimentarius Code of Hygienic Practice for Milk and Milk Products.
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CHAPTER 11.7.

BOVINE TUBERCULOSIS OF FARMED CERVIDAE

Article 11.7.1.

General provisions

The recommendations in this chapter are intended to manage the human and animal health risks associated with *Mycobacterium bovis* (*M. bovis*) infection in domestic (permanently captive and owned free-range) farmed cervidae (red deer, wapiti, sika, sambar, rusa, fallow deer, white-tailed, black-tailed and mule deer [*Cervus elephas*, *C. canadensis*, *C. nippon*, *C. unicolor unicolor*, *C. timorensis*, *Dama dama dama*, *Odocoileus virginianus borealis*, *Odocoileus hemionus columbianus* and *Odocoileus hemionus hemionus*]). The chapter does not address the management of tuberculosis in wild cervid populations.

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

Article 11.7.2.

Country or zone free from bovine tuberculosis of farmed cervidae

To qualify as free from bovine tuberculosis of farmed cervidae, a country or zone should satisfy the following requirements:

- 1) *M. bovis* infection in domestic bovines and in farmed cervidae as specified in Article 11.7.1. is a *notifiable disease* in the country;
- 2) an on-going awareness programme should be in place to encourage reporting of all cases suggestive of tuberculosis;
- 3) regular and periodic testing of all herds of farmed cervidae has demonstrated that *M. bovis* infection was not present in at least 99.8 percent of the herds and 99.9 percent of the farmed cervidae in the country or zone for three consecutive years;
- 4) a surveillance programme should be in place to detect bovine tuberculosis in the country or zone through ante- and post-mortem inspection as described in Chapter 6.2.;
- 5) if the surveillance programme described in points 3 and 4 above demonstrated that *M. bovis* infection was not present in at least 99.8 percent of the herds and 99.9 percent of the farmed cervidae in the country or zone for five consecutive years, surveillance may be maintained through ante- and post-mortem inspection as described in Chapter 6.2.;
- 6) farmed cervidae introduced into a country or zone free from bovine tuberculosis should be accompanied by a certificate from an official veterinarian attesting that they come from a country, zone, compartment or herd free from bovine tuberculosis or comply with the relevant provisions in Article 11.7.5. or in Article 11.7.6.

Article 11.7.3.

Compartment free from bovine tuberculosis of farmed cervidae

To qualify as a compartment free from bovine tuberculosis of farmed cervidae, the Veterinary Authority should be able to certify that the following requirements are satisfied:

- 1) all farmed cervidae:
 - a) showed no sign of bovine tuberculosis or lesions at ante- or post-mortem inspection for at least three consecutive years;

- b) were over six weeks of age at the time of the first test and have shown a negative result to at least two tuberculin tests carried out at an interval of a minimum of six months, the first test being performed at least six months following the *slaughter* of the last affected *animal*;
- c) met one of the following conditions:
 - i) showed a negative result to a twice yearly tuberculin test to ensure the continuing absence of bovine tuberculosis if the annual percentage of *herds* confirmed as infected with tuberculosis is more than 1 percent of all *herds* in the country or *zone* during the last two years; or
 - ii) showed a negative result to an annual tuberculin test to ensure the continuing absence of bovine tuberculosis if the annual percentage of *herds* confirmed as infected with tuberculosis is more than 0.2 percent but not more than 1 percent of all *herds* in the country or *zone* during the last two years; or
 - iii) showed a negative result to a tuberculin test every three years to ensure the continuing absence of bovine tuberculosis if the annual percentage of *herds* confirmed as infected with tuberculosis is not more than 0.2 percent of all *herds* in the country or *zone* during the last four years; or
 - iv) showed a negative result to a tuberculin test every four years to ensure the continuing absence of bovine tuberculosis if the annual percentage of *herds* confirmed as infected with tuberculosis is not more than 0.1 percent of all *herds* in the country or *zone* during the last six years;
- 2) farmed cervidae introduced into the *compartment* come from a *herd* free from bovine tuberculosis. This condition may be waived for *animals* which have been isolated for at least 90 days and which, prior to entry into the *compartment*, were subjected to at least two tuberculin tests carried out at a six-month interval with negative results with the second tuberculin test performed during the 30 days prior to entry into the *compartment*;
- 3) farmed cervidae in a *compartment* free from bovine tuberculosis are protected from contact with *wildlife* reservoirs of bovine tuberculosis and are managed under a common *biosecurity plan* protecting them from contamination with *M. bovis*, and the *compartment* has been approved by the *Veterinary Authority* in accordance with Chapters 4.3. and 4.4.

Article 11.7.4.

Herd free from bovine tuberculosis of farmed cervidae

To qualify as free from bovine tuberculosis, a *herd* of farmed cervidae should satisfy the following requirements:

- 1) the *herd* is in a country, a *zone* or a *compartment* free from bovine tuberculosis and is certified free by the *Veterinary Authority*; or
- 2) farmed cervidae in the *herd*:
 - a) showed no sign of bovine tuberculosis or lesions at ante- or post-mortem inspection for at least three consecutive years;
 - b) were over six weeks of age at the time of the first test and have shown a negative result to at least two tuberculin tests carried out at a minimum interval of six months; the first test should be performed at least six months following the *slaughter* of the last affected *animal*;
 - c) to maintain the free status, met one of the following conditions:
 - i) showed a negative result to an annual tuberculin test to ensure the continuing absence of bovine tuberculosis; or
 - ii) showed a negative result to a tuberculin test every two years to ensure the continuing absence of bovine tuberculosis if the annual percentage of *herds* confirmed as infected with tuberculosis is not more than 1 percent of all *herds* in the country or *zone* during the last two years; or

- iii) showed a negative result to a tuberculin test every three years to ensure the continuing absence of bovine tuberculosis if the annual percentage of *herds* confirmed as infected with tuberculosis is not more than 0.2 percent of all *herds* in the country or *zone* during the last four years; or
 - iv) showed a negative result to a tuberculin test every four years to ensure the continuing absence of bovine tuberculosis if the annual percentage of *herds* confirmed as infected with tuberculosis is not more than 0.1 percent of all *herds* in the country or *zone* during the last six years;
- 3) farmed cervidae introduced into the *herd* come from a *herd* free from bovine tuberculosis. This condition may be waived for *animals* which have been isolated for at least 90 days and which, prior to entry into the *herd*, were subjected to at least two tuberculin tests carried out at a six-month interval with negative results with the second tuberculin test performed during the 30 days prior to entry into the *herd*.

Article 11.7.5.

Recommendations for the importation of farmed cervidae for breeding or rearing

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

- 1) showed no sign of bovine tuberculosis on the day of shipment;
- 2) originate from a *herd* free from bovine tuberculosis of farmed cervidae that is in a country, *zone* or *compartment* free from bovine tuberculosis of farmed cervidae; or
- 3) were subjected to the tuberculin test for bovine tuberculosis with negative results during the 30 days prior to shipment and come from a *herd* free from bovine tuberculosis of farmed cervidae; or
- 4) have been isolated for at least 90 days prior to entry into the *herd* including protection from contact with *wildlife* reservoirs of bovine tuberculosis and were subjected to at least two tuberculin tests carried out at a six-month interval with negative results with the second tuberculin test performed during the 30 days prior to entry into the *herd*.

Article 11.7.6.

Recommendations for the importation of farmed cervidae for slaughter

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

- 1) showed no sign of bovine tuberculosis on the day of shipment;
- 2) originated from a *herd* free from bovine tuberculosis of farmed cervidae or were subjected to a tuberculin test for bovine tuberculosis with negative results during the 30 days prior to shipment;
- 3) were not being eliminated as part of an eradication programme against bovine tuberculosis.

Article 11.7.7.

Recommendations for the importation of semen of farmed cervidae

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

- 1) the donor *animals* showed no sign of bovine tuberculosis in any species on the day of collection of the semen; and either:
 - a) were kept in a *herd* free from bovine tuberculosis in a country, *zone* or *compartment* free from bovine tuberculosis of farmed cervidae, and which only accepts *animals* from free *herds* in a free country, *zone* or *compartment*; or

- b) showed negative results to tuberculin tests carried out annually and were kept in a *herd* free from bovine tuberculosis;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 11.7.8.

Recommendations for the importation of embryos/ova of farmed cervidae

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

- 1) the donor females and all other susceptible *animals* in the *herd* of origin showed no sign of bovine tuberculosis during the 24 hours prior to embryo collection; and either
 - a) originated from a *herd* free from bovine tuberculosis of farmed cervidae in a country, *zone* or *compartment* free from bovine tuberculosis; or
 - b) were kept in a *herd* free from bovine tuberculosis of farmed cervidae and were subjected to a tuberculin test for bovine tuberculosis with negative results during an isolation period of 30 days in the *establishment* of origin prior to collection;
- 2) the embryos/ova were collected, processed and stored in conformity with the provisions of Chapters 4.7., 4.8. and 4.9., as relevant.

Article 11.7.9.

Recommendations for the importation of fresh meat and meat products of farmed cervidae

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 have been subjected to ante- and post-mortem inspections as described in Chapter 6.2.

CHAPTER 11.8.

CONTAGIOUS BOVINE PLEUROPNEUMONIA

Article 11.8.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for contagious bovine pleuropneumonia (CBPP) shall be six 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 cattle (*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 *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 the *commodities* listed in this chapter, with the exception of those listed in Article 11.8.2., *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 11.8.2.

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 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).

Article 11.8.3.

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 in points 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 11.8.4.

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 11.8.3. applies.

Article 11.8.5.

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 11.8.6.

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 11.8.7.

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 six months, and

- 3) are transported directly to the *slaughterhouse* in sealed *vehicles*.

Article 11.8.8.

Recommendations for importation from CBPP free countries, zones or compartmentsFor 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 six months;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 11.8.9.

Recommendations for importation from CBPP infected countries or zonesFor 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 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 conformity with the provisions of Chapters 4.5. and 4.6.

Article 11.8.10.

Recommendations for importation from CBPP free countries, zones or compartmentsFor *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 six months;
- 2) the oocytes were fertilised with semen meeting the conditions of Article 11.8.8.;
- 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 11.8.11.

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 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 11.8.9.;
- 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 11.8.12.

Surveillance: introduction

Articles 11.8.12. to 11.8.17. define the principles and provide a guide for the *surveillance* of 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 11.8.13.

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.).

Article 11.8.14.

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 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 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 should 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 11.8.15.

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 11.8.16.

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 11.8.17.

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 11.8.4.

CHAPTER 11.9.

ENZOOTIC BOVINE LEUKOSIS

Article 11.9.1.

General provisions

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

For the purpose of this chapter, susceptible *animals* include cattle (*Bos indicus* and *Bos taurus*).

Article 11.9.2.

Country or zone free from enzootic bovine leukosis

1. Qualification

To qualify as free from enzootic bovine leukosis (EBL), a country or *zone* should satisfy the following requirements for at least three years:

- a) all tumours, suspected to be lymphosarcoma, are reported to the *Veterinary Authority*, and are examined at a *laboratory* by appropriate diagnostic techniques;
- b) all cattle with tumours in which EBL has been confirmed or cannot be ruled out are traced back to the *herds* in which they have been kept since birth; all cattle over 24 months of age in these *herds* are subjected to an individual diagnostic test for EBL;
- c) at least 99.8 percent of the *herds* are qualified as EBL free.

2. Maintenance of free status

For a country or *zone* to maintain its EBL free status:

- a) a serological survey should be carried out annually on a random sample of the cattle population of the country or *zone* sufficient to provide a 99 percent level of confidence of detecting EBL if it is present at a prevalence rate exceeding 0.2 percent of the *herds*;
- b) all imported cattle (except for *slaughter*) comply with the provisions of Article 11.9.5.;
- c) all imported bovine semen and embryos/ova fulfil the requirements referred to in Article 11.9.6. and in Article 11.9.7., respectively.

Article 11.9.3.

Compartment free from enzootic bovine leukosis

1. Qualification

To qualify as free from EBL, a *compartment* should satisfy the following requirements:

All *herds* in the *compartment* have satisfied the requirements of Article 11.9.4., and;

- a) all cattle introduced into the *compartment* come from a free *herd*;
- b) all bovine semen and embryos/ova introduced into the *compartment* after the first test have fulfilled the conditions referred to in Article 11.9.6. and in Article 11.9.7., respectively;

- c) the *compartment* is managed under a common *biosecurity plan* complying with Article 4.3.3. and Article 4.4.3., which protects the cattle from contact with EBL virus, which might occur from introduction of infected cattle, cattle products or material and through practices such as *vaccinations* and other injections, collection of blood and other biological samples, dehorning, ear-tagging, pregnancy diagnosis, etc.;
- d) the *compartment* has been approved by the *Veterinary Authority* in accordance with Chapters 4.3. and 4.4.

2. Maintenance of free status

For a *compartment* to maintain its EBL free status, all *herds* in the *compartment* should remain free according to Article 11.9.4. and specific *surveillance* implemented according to Article 4.4.5. has not detected the agent.

3. Revocation and re-approval of free status

If in an EBL free *compartment* any cattle react positively to a diagnostic test for EBL as described in the *Terrestrial Manual*, the status of the *compartment* shall be revoked until all *herds* have recovered their free status according to Article 11.9.4. and the *compartment* has been re-approved according to Chapters 4.3. and 4.4.

Article 11.9.4.

Herd free from enzootic bovine leukosis

1. Qualification

To qualify as free from EBL, a *herd* should satisfy the following requirements:

- a) there has been no evidence of EBL either clinical, post-mortem, or as a result of a diagnostic test for EBL within the previous two years;
- b) all cattle over 24 months of age have been subjected to a diagnostic test for EBL on two occasions with negative results, at an interval of not less than 4 months during the preceding 12 months;
- c) cattle introduced into the *herd* after the first test have fulfilled the conditions of Article 11.9.5.;
- d) all bovine semen and embryos/ova introduced into the *herd* after the first test have fulfilled the conditions referred to in Article 11.9.6. and in Article 11.9.7., respectively.

2. Maintenance of free status

For a *herd* to maintain its EBL free status, the cattle in the *herd* over 24 months of age on the day of sampling should be subjected to a diagnostic test for EBL with negative results at intervals of no more than 36 months and the conditions referred to in points 1a), 1c) and 1d) above continue to be fulfilled.

3. Suspension and restoration of free status

If in an EBL free *herd* any cattle react positively to a diagnostic test for EBL as described in the *Terrestrial Manual*, the status of the *herd* shall be suspended until the following measures have been taken:

- a) the cattle which have reacted positively, and their progeny since the last negative test, should be removed from the *herd* immediately; however, any cattle within the progeny which has been subjected to a PCR test with negative results (under study) may be retained in the *herd*;
- b) the remaining cattle should have been subjected to a diagnostic test for EBL carried out as described in point 1b) above with negative results at least four months after removal of the positive cattle and their progeny.

Article 11.9.5.

Recommendations for the importation of cattle for breeding or rearing

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

- 1) come from a country, *zone* or *compartment* free from EBL; or
- 2) come from an EBL free *herd*; or
- 3) meet the following three conditions:
 - a) the cattle were kept in a *herd* in which:
 - i) there has been no evidence of EBL either clinical, post-mortem, or as a result of a diagnostic test for EBL within the previous two years;
 - ii) all cattle over 24 months of age have been subjected to a diagnostic test for EBL on a blood sample on two occasions with negative results during the preceding 12 months, at an interval of at least 4 months, or were tested on two occasions while segregated from the *herd* in an isolation unit approved by the *Veterinary Authority* at an interval of at least 4 months;
 - b) the cattle were subjected to a diagnostic test for EBL within 30 days prior to shipment with negative results;
 - c) if less than two years of age, the cattle come from 'uterine' dams which have been subjected to a diagnostic test for EBL on a blood sample on two occasions at intervals of at least 4 months within the preceding 12 months, with negative results.

Article 11.9.6.

Recommendations for the importation of bovine semen

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

- 1) the donor bull was resident at the time of semen collection in an EBL free *herd*; and
- 2) if less than two years of age, the bull came from a serologically negative 'uterine' dam; or
- 3) the bull was subjected to diagnostic tests for EBL on blood samples on two occasions with negative results, the first test being carried out at least 30 days before and the second test at least 90 days after collection of the semen;
- 4) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 11.9.7.

Recommendations for the importation of bovine embryos/ova

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the embryos/ova have been collected, processed and stored in conformity with the provisions of Chapters 4.7., 4.8. and 4.9., as relevant.

CHAPTER 11.10.

HAEMORRHAGIC SEPTICAEMIA (*Pasteurella multocida* SEROTYPES 6:B AND 6:E)

Article 11.10.1.

General provisions

For the purposes of the *Terrestrial Code*, haemorrhagic septicaemia (HS) is defined as a highly fatal *disease* in cattle and buffaloes caused by specific serotypes of *Pasteurella multocida* designated as 6:B and 6:E. The *incubation period* for the *disease* shall be 90 days (active and latent carriers occur).

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

Article 11.10.2.

Country free from haemorrhagic septicaemia

A country may be considered free from HS when:

- 1) the *disease* is notifiable in the country;
- 2) no case of HS has occurred during the past three years.

This period shall be six months after the *slaughter* of the last affected *animal* for countries in which a *stamping-out policy* is practised with or without *vaccination* against HS.

Article 11.10.3.

Zone free from haemorrhagic septicaemia

A *zone* may be considered free of the *disease* if it can be established that HS has not been present for at least the past three years and if the following conditions are met:

- 1) the *disease* is notifiable in the whole country;
- 2) the *zone* shall be delineated by natural or artificial barriers;
- 3) the introduction of *animals* into the *zone* shall be carried out in conformity with the provisions of Articles 11.10.6. or 11.10.7.

Article 11.10.4.

Zone infected with haemorrhagic septicaemia

A *zone* shall be considered as infected with HS until at least six months have elapsed after the confirmation of the last case and the completion of a *stamping-out policy* and *disinfection* procedures.

Article 11.10.5.

Trade in commodities

Veterinary Authorities of HS free countries may prohibit importation or transit through their territory, from countries considered infected with HS, of cattle and buffaloes.

Article 11.10.6.

Recommendations for importation from HS free countries or zones

For cattle and buffaloes

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

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

Article 11.10.7.

Recommendations for importation from countries considered infected with HS

For cattle and buffaloes

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

- 1) showed no clinical sign of HS on the day of shipment; and
 - 2) were kept in a *quarantine station* for three months prior to shipment; and
 - 3) were examined for the presence of the causative organism in the naso-pharynx, in conformity with the procedures described in the *Terrestrial Manual*, on four occasions, at weekly intervals during the last month in quarantine with negative results; and
 - 4) were vaccinated not less than 30 days prior to shipment (under study); or
 - 5) showed a positive reaction to the passive mouse protection test (under study) conducted during pre-shipment quarantine.
-

CHAPTER 11.11.

INFECTIOUS BOVINE RHINOTRACHEITIS/ INFECTIOUS PUSTULAR VULVOVAGINITIS

Article 11.11.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for infectious bovine rhinotracheitis/infectious pustular vulvovaginitis (IBR/IPV) shall be 21 days.

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

Article 11.11.2.

Country or zone free from IBR/IPV

1. Qualification

To qualify as free from IBR/IPV, a country or *zone* should satisfy the following requirements:

- a) the *disease* or suspicion of the *disease* is notifiable;
- b) no *animal* has been vaccinated against IBR/IPV for at least three years;
- c) at least 99.8 percent of the *herds* are qualified as free from IBR/IPV.

2. Maintenance of free status

For a country or *zone* to maintain its status free from IBR/IPV:

- a) a serological survey should be carried out annually on a random sample of the cattle population of the country or *zone* sufficient to provide a 99 percent level of confidence of detecting IBR/IPV if it is present at a prevalence rate exceeding 0.2 percent of the *herds*;
- b) all imported bovines comply with the provisions of Article 11.11.4.;
- c) all imported bovine semen and embryos/ova fulfil the requirements referred to in Articles 11.11.6. or 11.11.7., and in Article 11.11.8., respectively.

Article 11.11.3.

Herd free from IBR/IPV

1. Qualification

To qualify as free from IBR/IPV, a *herd* of cattle should satisfy the following requirements:

- a) all the *animals* in the *herd* have been subjected to a diagnostic test for IBR/IPV on a blood sample on two occasions with negative results, at an interval of not less than 2 months and not more than 12 months; or
- b) if the *herd* contains only dairy cattle of which at least a quarter are lactating cows, each of the latter has been subjected to a diagnostic test on individual milk samples carried out on three occasions at intervals of two months with negative results;

- c) *animals* introduced into the *herd* after the first tests referred to in point a) or point b) as relevant have been:
 - i) kept in an IBR/IPV free *herd*; or
 - ii) placed in isolation for a period of 30 days, and during this period have been subjected to a diagnostic test for IBR/IPV on a blood sample on two occasions with negative results, at an interval of not less than 21 days;
- d) all bovine semen and embryos/ova introduced into the *herd* after the first tests referred to in point a) or point b) as relevant have fulfilled the conditions provided in Articles 11.11.6. or 11.11.7. and in Article 11.11.8., respectively.

2. Maintenance of free status

For a *herd* to maintain its status free from IBR/IPV, it should be subjected to the following tests with negative results:

EITHER

- a) diagnostic tests for IBR/IPV on blood samples for all the *animals* repeated at maximum intervals of 12 months; in *herds* composed entirely of fattening *animals*, blood sampling may be limited to *animals* sent for *slaughter*;

OR

- b) diagnostic tests on individual milk samples from all lactating cows repeated at intervals of six months; *Veterinary Authorities* applying an IBR/IPV eradication programme may extend these intervals (under study) if more than 98 percent of *herds* have been free from the *disease* for at least three years; and
- c) diagnostic tests on blood samples for IBR/IPV of all breeding bulls repeated at maximum intervals of 12 months;

AND

- d) diagnostic tests on blood samples for IBR/IPV of all cattle having aborted after more than three months of gestation.

Animals introduced into the *herd* should satisfy the conditions provided in point 1c) above, and semen and embryos/ova used in the *herd* should satisfy the conditions provided in Articles 11.11.6. or 11.11.7. and in Article 11.11.8., respectively.

Article 11.11.4.

Recommendations for the importation of cattle destined for IBR/IPV free herds

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

- 1) showed no clinical sign of IBR/IPV on the day of shipment;
- 2) come from an IBR/IPV free *herd*; or
- 3) were kept in a *quarantine station* for the 30 days prior to shipment and were subjected to a diagnostic test for IBR/IPV on a blood sample on two occasions with negative results, at an interval of not less than 21 days.

Article 11.11.5.

Recommendations for the importation of cattle intended for herds not qualified as free from IBR/IPV

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

- 1) showed no clinical sign of IBR/IPV on the day of shipment;
- 2) were vaccinated with an inactivated virus vaccine not less than one month and not more than six months prior to shipment.

Article 11.11.6.

Recommendations for the importation of fresh semen

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

- 1) the donor *animals* were kept in an IBR/IPV free *herd* at the time of collection of the semen;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 11.11.7.

Recommendations for the importation of frozen semen

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

- 1) the donor *animals* were kept in an IBR/IPV free *herd* at the time of collection of the semen; or
- 2) the donor *animals* were held in isolation during the period of collection and for the 30 days following collection and were subjected to a diagnostic test for IBR/IPV on a blood sample taken at least 21 days after collection of the semen, with negative results; or
- 3) if the serological status of the bull is unknown or if the bull is serologically positive, an aliquot of each semen collection was subjected to a virus isolation test or PCR, performed in accordance with the *Terrestrial Manual*, with negative results; and
- 4) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 11.11.8.

Recommendations for the importation of embryos/ova

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the embryos/ova were collected, processed and stored in conformity with the provisions of Chapters 4.7., 4.8. and 4.9., as relevant.

CHAPTER 11.12.
LUMPY SKIN DISEASE
(CAUSED BY GROUP III VIRUS, TYPE NEETHLING)

Article 11.12.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for lumpy skin disease (LSD) shall be 28 days.

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

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

When authorising import or transit of the *commodities* covered in the chapter, *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the LSD status of the cattle population of the *exporting country*.

Article 11.12.2.

LSD free country

A country may be considered free from LSD when:

- 1) LSD is notifiable in the country;
- 2) no case of LSD has been confirmed for at least the past three years;
- 3) no *vaccination* against LSD has been performed for at least three years;
- 4) *commodities* are imported in accordance with this chapter.

Article 11.12.3.

Recommendations for importation from LSD free countries

For domestic cattle and water buffaloes

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

- 1) showed no clinical sign of LSD on the day of shipment;
- 2) come from an LSD free country.

Article 11.12.4.

Recommendations for importation from LSD free countries

For wild cattle

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

- 1) showed no clinical sign of LSD on the day of shipment;

- 2) come from an LSD free country;

if the country of origin has a common border with a country considered infected with LSD:

- 3) were kept in a *quarantine station* for the 28 days prior to shipment.

Article 11.12.5.

Recommendations for importation from countries considered infected with LSD

For domestic cattle and water buffaloes

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

- 1) showed no clinical sign of LSD on the day of shipment;
- 2) either:
 - a) were not vaccinated against LSD and were tested negative using tests according to the *Terrestrial Manual* within 14 days prior to shipment; or
 - b) were vaccinated against LSD between 30 days and 90 days prior to shipment;

OR

- 3) either:
 - a) were kept since birth, or for the past 28 days, in an *establishment* where no case of LSD was officially reported during that period; or
 - b) were kept in a *quarantine station* for the 28 days prior to shipment.

Article 11.12.6.

Recommendations for importation from countries considered infected with LSD

For wild cattle

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

- 1) showed no clinical sign of LSD on the day of shipment;
- 2) were kept in a *quarantine station* for the 28 days prior to shipment.

Article 11.12.7.

Recommendations for importation from LSD free countries

For semen of cattle 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 LSD on the day of collection of the semen;
 - b) were kept for at least 28 days prior to collection in an LSD free country;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 11.12.8.

Recommendations for importation from countries considered infected with LSD

For semen of cattle 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 LSD on the day of collection of the semen and for the following 28 days;
 - b) were kept in the *exporting country* for the 28 days prior to collection, in an *establishment* or *artificial insemination centre* where no case of LSD was officially reported during that period, and that the *establishment* or *artificial insemination centre* was not situated in an LSD *infected zone*;
 - c) and either:
 - i) were vaccinated against LSD between 28 days and 90 days before semen collection and thereafter vaccinated annually; or
 - ii) were tested with negative results using a serum neutralisation test (SNT) or an indirect enzyme-linked immunosorbent assay (ELISA) for LSD on the day of first semen collection or up to 90 days after last collection; or
 - iii) showed stable seropositivity (not more than a two-fold rise in titre) on paired samples (tested side by side) to indirect ELISA or SNT carried out in quarantine, 28–60 days apart, with the first sample taken on the day of first semen collection;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 11.12.9.

Recommendations for importation from LSD free countries

For embryos/oocytes of cattle and water buffaloes

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

- 1) the donor *animals* showed no clinical sign of LSD on the day of collection of the embryos/oocytes; and
- 2) the embryos/oocytes were collected, processed and stored in conformity with the provisions of Chapters 4.7., 4.8. and 4.9., as relevant.

Article 11.12.10.

Recommendations for importation from countries considered infected with LSD

For embryos/oocytes of cattle and water buffaloes

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

- 1) the donor *animals*:
 - a) were kept in an *establishment* where no case of LSD has been reported during the 28 days prior to collection; and
 - b) showed no clinical sign of LSD on the day of collection;
 - c) and either:
 - i) were vaccinated against LSD between 28 days and 90 days before first embryo/oocyte collection and thereafter vaccinated annually; or

- ii) were tested with negative results using a serum neutralisation test (SNT) or an indirect enzyme-linked immunosorbent assay (ELISA) for LSD on the day of embryo/oocyte collection or up to 90 days after last collection; or
 - iii) showed stable seropositivity (not more than a two-fold rise in titre) on paired samples tested side by side to indirect ELISA or SNT carried out in quarantine, 28–60 days apart with one of the samples taken on the day of embryo/oocyte collection;
- 2) the embryos/oocytes were collected, processed and stored in conformity with the provisions of Chapters 4.7., 4.8. and 4.9., as relevant.

Article 11.12.11.

Recommendations for importation from LSD free countries

For products of animal origin (from cattle) intended for agricultural or industrial use

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products come from *animals* which have been kept in an LSD free country since birth or for at least the past 28 days.

Article 11.12.12.

Recommendations for importation from countries considered infected with LSD

For products of animal origin (from cattle and water buffaloes) intended for agricultural or industrial use

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products have been processed to ensure the destruction of the LSD virus.

Article 11.12.13.

Recommendations for importation from countries considered infected with LSD

For raw hides of cattle and water buffaloes

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products were stored for at least 40 days before shipment.

CHAPTER 11.13.

THEILERIOSIS

Article 11.13.1.

General provisions

For the purposes of the *Terrestrial Code*, theileriosis is defined as a highly fatal *disease* in cattle and buffaloes caused by *Theileria parva* and *T. annulata*.

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

Article 11.13.2.

Recommendations for importation from countries considered infected with theileriosis

For cattle

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

- 1) showed no clinical sign of theileriosis on the day of shipment; and
- 2) were, since birth, kept in a *zone* known to be free of theileriosis for the previous two years;

OR

- 3) showed no clinical sign of theileriosis on the day of shipment; and
- 4) were subjected to a diagnostic test for theileriosis with negative results during the 30 days prior to shipment (under study); and
- 5) showed negative results from microscopic examination of blood smears;

AND

in either of the above cases:

- 6) were treated with an acaricide prior to shipment and were completely free of ticks.
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CHAPTER 11.14.

TRICHOMONOSIS

Article 11.14.1.

General provisions

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

Article 11.14.2.

Recommendations for the importation of cattle for breeding

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

- 1) the *animals* showed no clinical sign of trichomonosis on the day of shipment;
- 2) the *animals* were kept in a *herd* in which no *case* of trichomonosis has been reported; and/or
- 3) for females which have been mated, direct microscopic examination and culture of vaginal mucus were negative.

Article 11.14.3.

Recommendations for the importation of bulls for breeding (natural service or artificial insemination)

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

- 1) the *animals* showed no clinical sign of trichomonosis on the day of shipment;
- 2) the *animals* were kept in a *herd* in which no *case* of trichomonosis has been reported; and/or
- 3) the *animals* have never been used for natural service; or
- 4) the *animals* have only mated virgin heifers; or
- 5) the *animals* were subjected to a direct microscopic and cultural examination of preputial specimens with negative results.

Article 11.14.4.

Recommendations for the importation of bovine semen

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

- 1) the donor *animals* have never been used for natural service; or
- 2) the donor *animals* have only mated virgin heifers; or
- 3) the donor *animals* were kept in an *establishment* or *artificial insemination centre* where no *case* of trichomonosis has been reported;

- 4) the donor *animals* were subjected to a direct microscopic and cultural examination of preputial specimens with negative results;
 - 5) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.
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SECTION 12.

EQUIDAE

CHAPTER 12.1.

INFECTION WITH AFRICAN HORSE SICKNESS VIRUS

Article 12.1.1.

General provisions

For the purposes of the *Terrestrial Code*, the *infective period* for African horse sickness virus (AHSV) shall be 40 days for domestic horses. Although critical information is lacking for some species, this chapter applies to all equidae.

All countries or *zones* adjacent to a country or *zone* not having free status should determine their AHSV status from an ongoing *surveillance* programme. Throughout the chapter, *surveillance* is in all cases understood as being conducted as described in Articles 12.1.13. and 12.1.15.

The following defines a *case* of African horse sickness (AHS):

- 1) AHSV has been isolated and identified from an equid or a product derived from that equid; or
- 2) viral antigen or viral RNA specific to one or more of the serotypes of AHSV has been identified in samples from one or more equids showing clinical signs consistent with AHS, or epidemiologically linked to a suspected or confirmed *case*; or
- 3) serological evidence of active infection with AHSV by detection of seroconversion with production of antibodies to structural or nonstructural proteins of AHSV that are not a consequence of *vaccination* have been identified in one or more equids that either show clinical signs consistent with AHS, or epidemiologically linked to a suspected or confirmed *case*.

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

Article 12.1.2.

AHSV free country or zone

- 1) A country or *zone* may be considered free from AHSV when African horse sickness (AHS) is notifiable in the whole country, systematic *vaccination* is prohibited, importation of equids and their semen, oocytes or embryos are carried out in accordance with this chapter, and either:
 - a) historical freedom as described in Chapter 1.4. has demonstrated no evidence of AHSV in the country or *zone*; or
 - b) the country or *zone* has not reported any *case* of AHS for at least two years and is not adjacent to an infected country or *zone*; or

- c) a *surveillance* programme has demonstrated no evidence of AHSV in the country or *zone* for at least 24 months; or
 - d) the country or *zone* has not reported any *case* of AHS for at least 40 days and a *surveillance* programme has demonstrated no evidence of *Culicoides* for at least two years in the country or *zone*.
- 2) An AHS free country or *zone* adjacent to an infected country or *infected zone* should include a *zone* in which *surveillance* is conducted in accordance with Articles 12.1.13. and 12.1.15. *Animals* within this *zone* should be subjected to continuing *surveillance*. The boundaries of this *zone* should be clearly defined, and should take account of geographical and epidemiological factors that are relevant to AHS transmission.
- 3) An AHSV free country or *zone* will not lose its free status through the importation of vaccinated or seropositive equids and their semen, oocytes or embryos from infected countries or *infected zones*, provided these imports are carried out in accordance with this chapter.
- 4) To qualify for inclusion in the list of AHSV free countries or *zones*, a Member should:
- a) have a record of regular and prompt animal disease reporting;
 - b) send a declaration to the OIE stating:
 - i) the section under point 1 on which the application is based;
 - ii) no routine *vaccination* against AHS has been carried out during the past 12 months in the country or *zone*;
 - iii) equids are imported in accordance with this chapter;
 - c) supply documented evidence that:
 - i) *surveillance* in accordance with Articles 12.1.13. and 12.1.15. is applied;
 - ii) regulatory measures for the early detection, prevention and control of AHS have been implemented.
- 5) The Member 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 4b) ii) and iii) and 4c) ii) above be re-submitted annually and changes in the epidemiological situation or other significant events be reported to the OIE according to the requirements in Chapter 1.1., and in particular, formally state that:
- a) there has been no *outbreak* of AHS during the past 12 months in the country or *zone*;
 - b) no evidence of AHSV infection has been found during the past 12 months in the country or *zone*.

Article 12.1.3.

AHSV seasonally free zone

- 1) An AHSV seasonally free *zone* is a part of an infected country or an *infected zone* in which for part of a year, ongoing *surveillance* and monitoring consistently demonstrated neither evidence of AHSV transmission nor the evidence of the presence of adult *Culicoides*.
- 2) AHS is notifiable in the whole country.
- 3) For the application of Articles 12.1.6., 12.1.8. and 12.1.9., the seasonally free period is:
 - a) taken to commence the day following the last evidence of AHSV transmission and of the cessation of activity of adult *Culicoides* as demonstrated by an ongoing *surveillance* programme, and
 - b) taken to conclude either:
 - i) at least 40 days before the earliest date that historical data show AHSV activity has recommenced;
 - or

- ii) immediately when current climatic data or data from a *surveillance* and monitoring programme indicate an earlier resurgence of activity of adult *Culicoides* vectors.
- 4) An AHSV seasonally free *zone* will not lose its free status through the importation of vaccinated or seropositive equids and their semen, oocytes or embryos from infected countries or *infected zones*, provided these imports are carried out in accordance with this chapter.

Article 12.1.4.

AHSV infected country or zone

For the purpose of this chapter, an AHSV infected country or *infected zone* is one that does not fulfil the requirements to qualify as either AHSV free country or *zone* or AHSV seasonally free *zone*.

Article 12.1.5.

Establishment of a containment zone within an AHS free country or zone

In the event of limited *outbreaks* within an AHS free country or *zone*, including within a *protection zone*, a single *containment zone*, which includes all *cases*, and should be large enough to contain any potentially infected *vectors*, can be established for the purpose of minimizing the impact on the entire country or *zone*. For this to be achieved, the *Veterinary Authority* should provide documented evidence 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 movements of equids has been imposed, and effective controls on the movement of equids and their products specified 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* and likely source of the *outbreak* has been identified;
 - f) all *cases* have been shown to be epidemiologically linked;
 - g) no new *cases* have been found in the *containment zone* within a minimum of two infectious *infective periods* as defined in Article 12.1.1.;
- 2) the equids within the *containment zone* should be clearly identifiable as belonging to the *containment zone*;
- 3) increased passive and targeted *surveillance* in accordance with Articles 12.1.13. and 12.1.15. in the rest of the country or *zone* has not detected any evidence of *infection*;
- 4) animal health measures that effectively prevent the spread of AHS to the rest of the country or *zone*, taking into consideration the establishment of a *protection zone* within the *containment zone*, the seasonal *vector* conditions and existing physical, geographical and ecological barriers;
- 5) ongoing *surveillance* in accordance with Articles 12.1.13. and 12.1.15. is in place in the *containment zone*.

The free status of the areas outside the *containment zone* is suspended pending the establishment of the *containment zone* in accordance with points 1 to 5 above. The free status of the areas outside the *containment zone* could be reinstated irrespective of the provisions of Article 12.1.6., once the *containment zone* is recognised by the OIE.

The recovery of the AHS free status of the *containment zone* should follow the provisions of Article 12.1.6.

Article 12.1.6.

Recovery of free status

When an AHS *outbreak* occurs in an AHS free country or *zone*, to regain the free status, the provisions of Article 12.1.2. apply.

Article 12.1.7.

Recommendations for importation from AHSV free countries or zones

For equids

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

- 1) showed no clinical sign of AHS on the day of shipment;
- 2) have not been vaccinated against AHS within the last 40 days;
- 3) were kept in an AHSV free country or *zone* since birth or for at least 40 days prior to shipment;
- 4) either:
 - a) did not transit through an *infected zone* during transportation to the *place of shipment*; or
 - b) were protected from *Culicoides* attacks at all times when transiting through an *infected zone*.

Article 12.1.8.

Recommendations for importation from AHSV seasonally free zones during the seasonally free period

For equids

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

- 1) showed no clinical sign of AHS on the day of shipment;
- 2) have not been vaccinated against AHS within the last 40 days;
- 3) and either:
 - a) were kept in an AHSV seasonally free *zone* during the seasonally free period since birth or for at least 40 days prior to shipment; or
 - b) were held in isolation in a *vector-protected establishment*:
 - i) for a period of at least 28 days and a serological test according to the *Terrestrial Manual* to detect antibodies to the AHSV group, was carried out with a negative result on a blood sample collected at least 28 days after introduction into the *vector-protected establishment*; or
 - ii) for a period of at least 40 days and serological tests according to the *Terrestrial Manual* to detect antibodies against AHSV were carried out with no significant increase in antibody titre on blood samples collected on two occasions, with an interval of not less than 21 days, the first sample being collected at least 7 days after introduction into the *vector-protected establishment*; or
 - iii) for a period of at least 14 days and an agent identification test according to the *Terrestrial Manual* was carried out with a negative results on a blood samples collected not less than 14 days after introduction into the *vector-protected establishment*;
- 4) were protected from *Culicoides* attacks at all times when transiting through an *infected zone*.

Article 12.1.9.

Recommendations for importation from AHSV infected countries or zonesFor equids

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

- 1) showed no clinical sign of AHS on the day of shipment;
- 2) have not been vaccinated against AHS within the last 40 days;
- 3) were held in isolation in a *vector-protected establishment*:
 - a) for a period of at least 28 days and a serological test according to the *Terrestrial Manual* to detect antibodies to the AHSV group, was carried out with a negative result on a blood sample collected at least 28 days after introduction into the *vector-protected establishment*; or
 - b) for a period of at least 40 days and serological tests according to the *Terrestrial Manual* to detect antibodies against AHSV were carried out with no significant increase in antibody titre on blood samples collected on two occasions, with an interval of not less than 21 days, the first sample being collected at least 7 days after introduction into the *vector-protected establishment*; or
 - c) for a period of at least 14 days and an agent identification test according to the *Terrestrial Manual* was carried out with a negative result on a blood sample collected not less than 14 days after introduction into the *vector-protected establishment*;
 - d) for a period of at least 40 days and were vaccinated, at least 40 days before shipment, in accordance with the *Terrestrial Manual* against all serotypes whose presence in the source population has been demonstrated through a *surveillance* programme in accordance with Articles 12.1.13. and 12.1.15., and were identified in the accompanying certification as having been vaccinated;
- 4) were protected from *Culicoides* attacks at all times during transportation (including transportation to and at the *place of shipment*).

Article 12.1.10.

Recommendations for the importation of equine semen

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

- 1) showed no clinical sign of AHS on the day of collection of the semen and for the following 40 days;
- 2) had not been immunised against AHS with a live attenuated vaccine within 40 days prior to the day of collection;
- 3) were either:
 - a) kept in an AHSV free country or free *zone* or from an AHSV seasonally free *zone* (during the seasonally free period) for at least 40 days before commencement of, and during collection of the semen, or
 - b) kept in an AHSV free *vector-protected artificial insemination centre* throughout the collection period, and subjected to either:
 - i) a serological test according to the *Terrestrial Manual* to detect antibody to the AHSV group, carried out with a negative result on a blood sample collected at least 28 days and not more than 90 days after the last collection of semen; or
 - ii) agent identification tests according to the *Terrestrial Manual* carried out with negative results on blood samples collected at commencement and conclusion of, and at least every seven days, during semen collection for this consignment.

Article 12.1.11.

Recommendations for the importation of *in vivo* derived equine embryo or oocytes

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 AHS on the day of collection of the embryos or oocytes and for the following 40 days;
 - b) had not been immunised against AHS with a live attenuated vaccine within 40 days prior to the day of collection;
 - c) were either:
 - i) kept in an AHSV free country or free *zone* or from an AHSV seasonally free *zone* (during the seasonally free period) for at least 40 days before commencement of, and during collection of the embryos or oocytes, or
 - ii) kept in an AHSV free *vector-protected collection centre* throughout the collection period, and subjected to either:
 - a serological test according to the *Terrestrial Manual* to detect antibody to the AHSV group carried out with a negative result on a blood sample collected at least 28 days and not more than 90 days after the last collection of embryos or oocytes; or
 - agent identification tests according to the *Terrestrial Manual* carried out with negative results on blood samples collected at commencement and conclusion of, and at least every seven days during embryos or oocytes collection for this consignment;
- 2) the embryos were collected, processed and stored in conformity with the provisions of Chapters 4.7. and 4.9., as relevant;
- 3) semen used to fertilize the oocytes complies at least with the requirements in Article 12.1.8.

Article 12.1.12.

Protecting animals from *Culicoides* attack

1. Vector-protected establishment or facility

The *establishment* or facility should be approved by the *Veterinary Authority* and the means of protection should at least comprise the following:

- a) Appropriate physical barriers at entry and exit points, for example double-door entry-exit system;
- b) openings of the building are *vector* screened with mesh of appropriate gauge impregnated regularly with an approved insecticide according to manufacturers' instruction;
- c) *vector surveillance* and control within and around the building;
- d) measures to limit breeding sites for *vectors* in vicinity of the *establishment* or facility;
- e) Standard Operating Procedure, including description of back-up and alarm systems, for operation of the *establishment* or facility and transport of horses to the place of *loading*.

2. During transportation

When transporting equids through AHSV infected countries or AHSV *infected zones*, *Veterinary Authorities* should require strategies to protect *animals* from *Culicoides* attacks during transport, taking into account the local ecology of the *vector*.

a) Transport by road

Potential *risk management* strategies include a combination of:

- i) treating *animals* with chemical repellents prior to and during transportation, in sanitized *vehicles* treated with appropriate residual contact insecticide;
- ii) *loading*, transporting and *unloading animals* at times of low *vector* activity (i.e. bright sunshine and low temperature);
- iii) ensuring *vehicles* do not stop en route during dawn or dusk, or overnight, unless the *animals* are held behind insect proof netting;
- iv) darkening the interior of the *vehicle*, for example by covering the roof or sides of *vehicles* with shade cloth;
- v) monitoring for *vectors* at common stopping and offloading points to gain information on seasonal variations;
- vi) using historical, ongoing or AHS modelling information to identify low risk ports and transport routes.

b) Transport by air

Prior to *loading* the equids, the crates, *containers* or jetstalls are sprayed with an insecticide approved in the country of dispatch.

Crates, *containers* or jet stalls in which equids are being transported and the cargo hold of the aircraft must be sprayed with an approved insecticide just after the doors to the aircraft are closed and prior to takeoff, or immediately prior to the closing of the aircraft doors after *loading*.

In addition, during any stopover in countries or *zones* not free of AHS, prior to, or immediately after the opening of any aircraft door and until all doors are closed, netting of appropriate gauge impregnated with an approved insecticide must be placed over all crates, *containers* or jetstalls.

Article 12.1.13.

Surveillance: introduction

Articles 12.1.13. and 12.1.15. define the principles and provide guidance on *surveillance* for AHS, complementary to Chapter 1.4. and, for vectors, complementary to Chapter 1.5.

AHS is a *vector-borne infection* transmitted by a limited number of species of *Culicoides* insects. Unlike the related bluetongue virus, AHSV is so far geographically restricted to sub Saharan Africa with periodic excursions into North Africa, southwest Europe, the Middle East and adjacent regions of Asia. An important component of AHSV epidemiology is vectorial capacity which provides a measure of *disease risk* that incorporates *vector* competence, abundance, seasonal incidence, biting rates, survival rates and the *extrinsic incubation period*. However, methods and tools for measuring some of these *vector* factors remain to be developed, particularly in a field context.

According to this chapter, a Member demonstrating freedom from AHSV *infection* for the entire 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 should be planned and implemented according to general conditions and methods described in this chapter. This requires the support of a *laboratory* able to undertake identification of AHSV *infection* through the virus detection and antibody tests described in the *Terrestrial Manual*.

Susceptible captive wild, feral and wild equine populations should be included in the *surveillance* programme.

For the purposes of *surveillance*, a *case* refers to an equid infected with AHSV.

The purpose of *surveillance* is to determine if a country or *zone* is free from AHSV or if a *zone* is seasonally free from AHSV. *Surveillance* deals not only with the occurrence of clinical signs caused by AHSV, but also with evidence of *infection* with AHSV in the absence of clinical signs.

Article 12.1.14.

Surveillance: general conditions and methods

- 1) A *surveillance* system should be under the responsibility of the *Veterinary Authority*. In particular the following should be in place:
 - a) a formal and ongoing system for detecting and investigating *outbreaks* of *disease*;
 - b) a procedure for the rapid collection and transport of samples from suspect *cases* of AHS to a *laboratory* for AHS diagnosis as described in the *Terrestrial Manual*;
 - c) a system for recording, managing and analysing diagnostic, epidemiological and *surveillance* data.
- 2) The AHS *surveillance* programme should:
 - a) in a country or *zone*, free or seasonally free, include an early warning system for reporting suspicious *cases*. Persons who have regular contact with equids, as well as diagnosticians, should report promptly any suspicion of AHS to the *Veterinary Authority*. 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 AHS. The rate at which such suspicious *cases* are likely to occur will differ between epidemiological situations and cannot therefore be predicted reliably. All suspected *cases* of AHS should be investigated immediately and samples should be taken and submitted to a *laboratory*. This requires that sampling kits and other equipment are available for those responsible for *surveillance*;
 - b) conduct random or targeted serological and virological *surveillance* appropriate to the *infection* status of the country or *zone* in accordance with Chapter 1.4.

Article 12.1.15.

Surveillance strategies

The target population for *surveillance* aimed at identification of *disease* or *infection* should cover susceptible equids within the country or *zone*. Active and passive *surveillance* for AHSV *infection* should be ongoing. *Surveillance* should be composed of random or targeted approaches using virological, serological and clinical methods appropriate for the *infection* status of the country or *zone*.

A Member should justify the *surveillance* strategy chosen as appropriate to detect the presence of AHSV *infection* in accordance with Chapter 1.4. and the prevailing epidemiological situation. It may, for example, be appropriate to target clinical *surveillance* at particular species likely to exhibit clinical signs (e.g. horses). Similarly, virological and serological testing may be targeted to species that rarely show clinical signs (e.g. donkeys).

In vaccinated populations serological and virological *surveillance* is necessary to detect the AHSV types circulating to ensure that all circulating types are included in the *vaccination* programme.

If a Member wishes to declare freedom from AHSV *infection* in a specific *zone*, the design of the *surveillance* strategy would need to be aimed at the population within the *zone*.

For random surveys, the design of the sampling strategy will need to incorporate 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, expected prevalence and diagnostic sensitivity of the tests determine the level of confidence in the results of the survey. The Member 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, needs to be based on the prevailing or historical epidemiological situation.

Irrespective of the survey approach 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 for the *vaccination* or *infection* history and the different species in the target population.

Irrespective of the testing system employed, *surveillance* system 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 both supplementary tests and follow-up investigation to collect diagnostic material from the original sampling unit as well as those which may be epidemiologically linked to it.

The principles for *surveillance* for *disease/infection* are technically well defined. *Surveillance* programmes to prove the absence of AHSV *infection/circulation*, need to be carefully designed to avoid producing results that are either insufficiently reliable to be accepted by international trading partners, or excessively costly and logistically complicated. The design of any *surveillance* programme, therefore, requires inputs from professionals competent and experienced in this field.

1. Clinical surveillance

Clinical *surveillance* aims at the detection of clinical signs of AHS in equids particularly during a newly introduced *infection*. In horses, clinical signs may include pyrexia, oedema, hyperaemia of mucosal membranes and dyspnoea.

AHS suspects detected by clinical *surveillance* should always be confirmed by *laboratory* testing.

2. Serological surveillance

Serological *surveillance* of equine populations is an important tool to confirm absence of AHSV transmission in a country or *zone*. The species tested should reflect the local epidemiology of AHSV *infection*, and the equine species available. Management variables that may reduce the likelihood of *infection*, such as the use of insecticides and animal housing, should be taken into account when selecting equids to be included in the *surveillance* system.

Samples should be examined for antibodies against AHSV using tests prescribed in the *Terrestrial Manual*. Positive AHSV antibody tests results can have four possible causes:

- a) natural *infection* with AHSV;
- b) *vaccination* against AHSV;
- c) maternal antibodies;
- d) positive results due to the lack of specificity of the test.

It may be possible to use sera collected for other purposes for AHSV *surveillance*. However, the principles of survey design described in these recommendations and the requirements for a statistically valid survey for the presence of AHSV *infection* should not be compromised.

The results of random or targeted serological surveys are important in providing reliable evidence that no AHSV *infection* is present in a country or *zone*. It is, therefore, essential that the survey is thoroughly documented. It is critical to interpret the results in light of the movement history of the *animals* being sampled.

Serological *surveillance* in a free *zone* should target those areas that are at highest risk of AHSV transmission, based on the results of previous *surveillance* and other information. This will usually be towards the boundaries of the free *zone*. In view of the epidemiology of AHSV, either random or targeted sampling is suitable to select *herds* or *animals* for testing.

Serological *surveillance* in a free country or *zone* should be carried out over an appropriate distance from the border with an infected country or *infected zone*, based upon geography, climate, history of *infection* and other relevant factors. The *surveillance* should be carried out over a distance of at least 100 kilometres from the border with that country or *zone*, but a lesser distance could be acceptable if there are relevant ecological

or geographical features likely to interrupt the transmission of AHSV. An AHSV free country or *zone* may be protected from an adjacent infected country or *infected zone* by a *protection zone*.

Serological *surveillance* in *infected zones* will identify changes in the boundary of the *zone*, and can also be used to identify the AHSV types circulating. In view of the epidemiology of AHSV *infection*, either random or targeted sampling is suitable.

3. Virological surveillance

Isolation and genetic analysis of AHSV from a proportion of infected *animals* is beneficial in terms of providing information on serotype and genetic characteristics of the viruses concerned.

Virological *surveillance* using tests described in the *Terrestrial Manual* can be conducted:

- a) to identify virus circulation in at risk populations;
- b) to confirm clinically suspect cases;
- c) to follow up positive serological results;
- d) to better characterize the genotype of circulating virus in a country or *zone*.

4. Sentinel animals

Sentinel *animals* are a form of targeted *surveillance* with a prospective study design. They comprise groups of unexposed equids that are not vaccinated and are managed at fixed locations and observed and sampled regularly to detect new AHSV *infections*.

The primary purpose of a sentinel equid programme is to detect AHSV *infections* occurring at a particular place, for instance sentinel groups may be located on the boundaries of *infected zones* to detect changes in distribution of AHSV. In addition, sentinel equid programmes allow the timing and dynamics of *infections* to be observed.

A sentinel equid programme should use *animals* of known source and history of exposure, control management variables such as use of insecticides and animal housing (depending on the epidemiology of AHSV in the area under consideration), and be flexible in its design in terms of sampling frequency and choice of tests.

Care is necessary in choosing the sites for the sentinel groups. The aim is to maximise the chance of detecting AHSV activity at the geographical location for which the sentinel site acts as a sampling point. The effect of secondary factors that may influence events at each location, such as climate, may also be analysed. To avoid confounding factors sentinel groups should comprise *animals* selected to be of similar age and susceptibility to AHSV *infection*. The only feature distinguishing groups of sentinels should be their geographical location. Sera from sentinel animal programmes should be stored methodically in a serum bank to allow retrospective studies to be conducted in the event of new serotypes being isolated.

The frequency of sampling should reflect the equine species used and the reason for choosing the sampling site. In endemic areas virus isolation will allow monitoring of the serotypes and genotypes of AHSV circulating during each time period. The borders between infected and non-infected areas can be defined by serological detection of *infection*. Monthly sampling intervals are frequently used. Sentinels in declared free *zones* add to confidence that AHSV *infections* are not occurring unobserved. Here sampling prior to and after the possible period of transmission is sufficient.

Definitive information on AHSV circulating in a country or *zone* is provided by isolation and identification of the viruses. If virus isolation is required sentinels should be sampled at sufficiently frequent intervals to ensure that some samples are collected during the period of viraemia.

5. Vector surveillance

AHSV is transmitted between equine hosts by species of *Culicoides* which vary across the world. It is therefore important to be able to identify potential *vector* species accurately although many such species are closely related and difficult to differentiate with certainty.

Vector surveillance is aimed at demonstrating the absence of *vectors* or defining high, medium and low-risk areas and local details of seasonality by determining the various species present in an area, their respective seasonal occurrence, and abundance. *Vector surveillance* has particular relevance to potential areas of spread. Long term *surveillance* can also be used to assess *vector* abatement measures or to confirm continued absence of *vectors*.

The most effective way of gathering this information should take account of the biology and behavioural characteristics of the local *vector* species of *Culicoides* and may include the use of Onderstepoort-type light traps or similar, operated from dusk to dawn in locations adjacent to equids.

Vector surveillance should be based on scientific sampling techniques. The choice of the number and types of traps to be used in *vector surveillance* and the frequency of their use should take into account the size and ecological characteristics of the area to be surveyed.

The operation of *vector surveillance* sites at the same locations as sentinel *animals* is advisable.

The use of a *vector surveillance* system to detect the presence of circulating virus is not recommended as a routine procedure as the typically low *vector infection* rates mean that such detections can be rare. Other *surveillance* strategies are preferred to detect virus circulation.

CHAPTER 12.2.

CONTAGIOUS EQUINE METRITIS

Article 12.2.1.

General provisions

For the purposes of this chapter, 'infected *establishment*' means premises in which equines infected with contagious equine metritis (CEM) are kept. The *establishment* shall be considered infected until two months have elapsed since the confirmation of the last case and after the premises have been adequately cleansed and disinfected.

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

Article 12.2.2.

Recommendations for the importation of stallions and mares considered free from CEM (for countries where an official control organisation is present)

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

- 1) showed no clinical sign of CEM on the day of shipment;
- 2) have had no contact with CEM:
 - a) directly, through coitus with an infected *animal*; or
 - b) indirectly, by passing through an infected *establishment*;
- 3) were subjected to the *laboratory* test for CEM with negative results during the 30 days prior to shipment.

Article 12.2.3.

Recommendations for the importation of stallions and mares which have previously shown signs of CEM or which have been in contact with CEM (for countries where an official control organisation is present)

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the *animals* which have been in direct contact through coitus with an infected *animal*, or indirect contact by passing through an infected *establishment*:

- 1) have been recognised as not being contagious through laboratory tests for CEM;
- 2) have been protected against any possibility of contagion since the beginning of the tests.

CHAPTER 12.3.

DOURINE

Article 12.3.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for dourine shall be six months.

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

Article 12.3.2.

Dourine free country

A country formerly infected with dourine may be considered free again when:

- 1) a *stamping-out policy* has been practised for affected *animals*;
- 2) no clinical case of dourine has been observed during the past two years;
- 3) breeding horses have been subjected to a diagnostic test for dourine with negative results performed annually over a two-year period.

Article 12.3.3.

Recommendations for importation from dourine free countries for the past six months

for equines

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

- 1) showed no clinical sign of dourine on the day of shipment;
- 2) were kept since birth, or for the six months prior to shipment, in a country which has been free from dourine for not less than the past six months.

Article 12.3.4.

Recommendations for importation from countries considered infected with dourine

For equines

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

- 1) showed no clinical sign of dourine on the day of shipment;
- 2) were kept for the six months prior to shipment in an *establishment* where no case of dourine was officially reported during that period;
- 3) were subjected to a diagnostic test for dourine with negative results during the 15 days prior to shipment.

Article 12.3.5.

Recommendations for importation from dourine free countries for the past six months

For semen of equines

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the donor *animals* were kept since birth, or for the six months prior to collection of the semen, in a country which has been free from dourine for not less than the past six months.

Article 12.3.6.

Recommendations for importation from countries considered infected with dourine

For semen of equines

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

- 1) the donor *animals*:
 - a) were kept for the six months prior to collection of the semen in an *establishment* or *artificial insemination centre* where no *case* of dourine was reported during that period;
 - b) were subjected to a diagnostic test for dourine with negative results;
 - 2) the microscopic examination of the semen for dourine was negative.
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CHAPTER 12.4.
**EQUINE ENCEPHALOMYELITIS
(EASTERN AND WESTERN)**

Article 12.4.1.

General provisions

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

Article 12.4.2.

Recommendations for the importation of equines

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

- 1) showed no clinical sign of equine encephalomyelitis on the day of shipment and during the three months prior to shipment;
 - 2) were kept for the three months prior to shipment in an *establishment* where no *case* of equine encephalomyelitis was officially reported during that period; or
 - 3) were kept in a *quarantine station* for the 21 days prior to shipment and were protected from insect *vectors* during quarantine and transportation to the *place of shipment*; or
 - 4) were vaccinated not less than 15 days and not more than one year prior to shipment.
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CHAPTER 12.5.
EQUINE INFECTIOUS ANAEMIA

Article 12.5.1.

General provisions

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

Article 12.5.2.

Recommendations for the importation of equines

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

- 1) the *animals* showed no clinical sign of equine infectious anaemia (EIA) on the day of shipment and during the 48 hours prior to shipment; and
 - 2) no case of EIA has been associated with any premises where the *animals* were kept during the three months prior to shipment; and
 - 3) if imported on a permanent basis, the *animals* were subjected to a diagnostic test for EIA with negative results on blood samples collected during the 30 days prior to shipment; or
 - 4) if imported on a temporary basis, the *animals* were subjected to a diagnostic test for EIA with negative results on blood samples collected during the 90 days prior to shipment.
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CHAPTER 12.6.

INFECTION WITH EQUINE INFLUENZA VIRUS

Article 12.6.1.

General provisions

For the purposes of the *Terrestrial Code*, equine influenza (EI) is defined as an *infection* of domestic equids.

This chapter deals not only with the occurrence of clinical signs caused by equine influenza virus (EIV), but also with the presence of *infection* with EIV in the absence of clinical signs.

For the purposes of this chapter, isolation is defined as 'the separation of domestic equids from domestic equids of a different equine influenza health status, utilising appropriate biosecurity measures, with the purpose of preventing the transmission of *infection*'.

For the purposes of the *Terrestrial Code*, the *infective period* for EI shall be 21 days.

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

When authorising import or transit of the *commodities* listed in this chapter, with the exception of those listed in Article 12.6.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the EI status of the equine population of the *exporting country, zone or compartment*.

Article 12.6.2.

Safe commodities

When authorising import or transit of the following *commodities*, *Veterinary Authorities* should not require any EIV related conditions, regardless of the EI status of the equine population of the *exporting country, zone or compartment*:

- 1) equine semen;
- 2) *in vivo* derived equine embryos collected, processed and stored in conformity with the provisions of Chapters 4.7. and 4.9., as relevant (under study).

Article 12.6.3.

Determination of the EI status of a country, a zone or a compartment

The EI status of a country, a *zone* or a *compartment* can be determined on the basis of the following criteria:

- 1) the outcome of a *risk assessment* identifying all risk factors and their historic relevance;
- 2) whether EI is notifiable in the whole country, an on-going EI awareness programme is in place, and all notified suspect occurrences of EI are subjected to field and, where applicable, *laboratory* investigations;
- 3) appropriate *surveillance* is in place to demonstrate the presence of *infection* in the absence of clinical signs in domestic equids.

Article 12.6.4.

EI free country, zone or compartment

A country, *zone* or *compartment* may be considered free from EI provided the *disease* is notifiable in the whole country and it shows evidence, through an effective *surveillance* programme, planned and implemented according to the general principles in Chapter 1.4., that no *case* of EI occurred in the past two years. The *surveillance* may need to be adapted to parts of the country, *zone* or *compartment* depending on historical or geographical factors, industry structure, population data, movements of equids within and into the country, *zone* or *compartment*, wild equine populations or proximity to recent *outbreaks*.

A country, *zone* or *compartment* seeking freedom from EI, in which *vaccination* is practised, should also demonstrate that EIV has not been circulating in the population of domestic, feral and wild equids during the past 12 months, through *surveillance*, in accordance with Chapter 1.4. In a country in which *vaccination* is not practised, *surveillance* may be conducted using serological testing alone. In countries where *vaccination* is practised, the *surveillance* should include agent identification methods described in the *Terrestrial Manual* for evidence of *infection*.

A country, *zone* or *compartment* seeking freedom from EI should apply appropriate movement controls to minimise the risk of introduction of EIV in accordance with this chapter.

If an *outbreak* of clinical EI occurs in a previously free country, *zone* or *compartment*, free status can be regained 12 months after the last clinical *case*, providing that *surveillance* for evidence of *infection* has been carried out during that twelve-month period in accordance with Chapter 1.4.

Article 12.6.5.

Recommendations for the importation of domestic equids for immediate slaughter

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

Article 12.6.6.

Recommendations for the importation of domestic equids for unrestricted movement

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

- 1) came from an EI free country, *zone* or *compartment* in which they had been resident for at least 21 days; in the case of a vaccinated domestic equid, information on its *vaccination* status should be included in the veterinary certificate;

OR

- 2) came from a country, *zone* or *compartment* not known to be free from EI, were subjected to pre-export isolation for 21 days and showed no clinical sign of EI during isolation nor on the day of shipment; and
- 3) were immunised according to the recommendations of the manufacturer with a vaccine complying with the standards described in the *Terrestrial Manual* between 21 and 90 days before shipment either with a primary course or a booster; information on their *vaccination* status should be included in the veterinary certificate or the passport in accordance with Chapter 5.12.

For additional security, countries that are free of EI or undertaking an eradication programme may also request that the domestic equids were tested negative for EIV by an agent identification test for EI described in the *Terrestrial Manual* conducted on samples collected on two occasions at 7 to 14 days and less than 5 days before shipment.

Article 12.6.7.

Recommendations for the importation of domestic equids which will be kept in isolation (see Article 12.6.1.)

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

- 1) came from an EI free country, *zone* or *compartment* in which they had been resident for at least 21 days; in the case of a vaccinated domestic equid, information on its *vaccination* status should be included in the veterinary certificate;

OR

- 2) showed no clinical sign of EI in any premises in which the domestic equids had been resident for the 21 days prior to shipment nor on the day of shipment; and
- 3) were immunised according to the recommendations of the manufacturer with a vaccine complying with the standards described in the *Terrestrial Manual*; information on their *vaccination* status should be included in the veterinary certificate or the passport in accordance with Chapter 5.12.

Article 12.6.8.

Recommendations for the importation of fresh meat of equids

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the *fresh meat* came from equids which had been subjected to ante- and post-mortem inspections as described in Chapter 6.2.

CHAPTER 12.7.

EQUINE PIROPLASMOSIS

Article 12.7.1.

General provisions

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

Article 12.7.2.

Recommendations for the importation of equines

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

- 1) showed no clinical sign of equine piroplasmosis on the day of shipment;
- 2) were subjected to diagnostic tests for equine piroplasmosis (*Theileria equi* and *Babesia caballi*) with negative results during the 30 days prior to shipment;
- 3) were maintained free from ticks, by preventive treatment when necessary, during the 30 days prior to shipment.

Article 12.7.3.

Recommendations for the importation of competition horses on a temporary basis

Veterinary Authorities of importing countries should consider the possibility of importing competition horses on a temporary basis and which are positive to the testing procedure referred to in point 2 of Article 12.7.2. under the following safeguards:

- 1) the horses are accompanied by a passport in conformity with the model contained in Chapter 5.12.;
 - 2) the *Veterinary Authorities of importing countries* require the presentation of an *international veterinary certificate* attesting that the *animals*:
 - a) showed no clinical sign of equine piroplasmosis on the day of shipment;
 - b) were treated against ticks within the seven days prior to shipment;
 - 3) the horses are kept in an area where necessary precautions are taken to control ticks and that is under the direct supervision of the *Veterinary Authority*;
 - 4) the horses are regularly examined for the presence of ticks under the direct supervision of the *Veterinary Authority*.
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CHAPTER 12.8.

EQUINE RHINOPNEUMONITIS

Article 12.8.1.

General provisions

Equine rhinopneumonitis (ER) is a collective term for any one of several highly contagious, clinical disease entities of equids that may occur as a result of *infection* by either of two closely related herpesviruses, equid herpesvirus-1 and -4 (EHV-1 and EHV-4).

Infection by either EHV-1 or EHV-4 is characterised by a primary respiratory tract *disease* of varying severity that is related to the age and immunological status of the infected *animal*. *Infections* by EHV-1 in particular are capable of progression beyond the respiratory mucosa to cause the more serious disease manifestations of abortion, perinatal foal death, or neurological dysfunction.

For the purpose of *international trade*, recommendations are provided for EHV-1 (abortigenic and paralytic forms) only.

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

Article 12.8.2.

Recommendations for the importation of equines

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

- 1) showed no clinical sign of equine herpes virus type 1 *infection* (abortigenic and paralytic forms) on the day of shipment and during the 21 days prior to shipment;
 - 2) were kept for the 21 days prior to shipment in an *establishment* where no *case* of equine herpes virus type 1 *infection* (abortigenic and paralytic forms), was reported during that period.
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CHAPTER 12.9.

INFECTION WITH EQUINE ARTERITIS VIRUS

Article 12.9.1.

General provisions

For the purposes of the *Terrestrial Code*, equine viral arteritis (EVA) is defined as an *infection* of domestic equids with equine arteritis virus (EVA).

This chapter deals not only with the occurrence of clinical signs caused by EAV, but also with the presence of *infection* with EAV in the absence of clinical signs. For the purposes of this chapter, isolation is defined as the separation of domestic equids from those of a different EVA health status, utilising appropriate biosecurity measures, with the objective of preventing the transmission of *infection*.

The *infective period* for EVA shall be 28 days for all categories of equids except sexually mature stallion where the *infective period* may be for the life of the *animal*. Because the *infective period* may be extended in the case of virus shedding in semen, the status of seropositive stallions should be checked to ensure that they do not shed virus in their semen.

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

Article 12.9.2.

Recommendations for the importation of uncastrated male equids

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the *animals* showed no clinical sign of EVA on the day of shipment and during the 28 days prior to shipment and met one of the following requirements:

- 1) were isolated for the 28 days prior to shipment and were subjected to a test for EVA, as prescribed in the *Terrestrial Manual*, carried out on a single blood sample collected during the 21 days prior to shipment with negative result; or
- 2) were subjected between six and nine months of age to a test for EVA as prescribed in the *Terrestrial Manual*:

EITHER:

- a) with a negative result,

OR

- b) with a positive result, followed at least 14 days later by a second test showing a stable or decreasing titre;

and were immediately vaccinated against EVA and regularly revaccinated according to the recommendations of the manufacturer; or

- 3) met the following requirements:
 - a) were isolated; and
 - b) not earlier than seven days of commencing isolation were subjected to a test for EVA as prescribed in the *Terrestrial Manual* on a blood sample with negative results; and
 - c) were then immediately vaccinated; and
 - d) were kept separated from other equids for 21 days following *vaccination*; and

- e) were revaccinated regularly according to the recommendations of the manufacturer; or
- 4) have been subjected to a test for EVA, as prescribed in the *Terrestrial Manual*, carried out on a blood sample with positive results and then: either
 - a) were subsequently test mated to two mares within six months prior to shipment which were subjected to two tests for EVA as prescribed in the *Terrestrial Manual* with negative results on blood samples collected at the time of test mating and again 28 days after the mating; or
 - b) were subjected to a test for equine arteritis virus as prescribed in the *Terrestrial Manual* with negative results, carried out on semen collected during the six months prior to shipment; or
 - c) were subjected to a test for equine arteritis virus as prescribed in the *Terrestrial Manual* with negative results, carried out on semen collected within six months after the blood sample was tested, then immediately vaccinated, and revaccinated regularly according to the recommendations of the manufacturer.

Article 12.9.3.

Recommendations for the importation of equids other than uncastrated males

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the *animals* showed no clinical sign of EVA on the day of shipment; and

EITHER

- 1) were kept in an *establishment* where no *animals* have shown any signs of EVA for the 28 days prior to shipment; and
 - a) were subjected to a test for EVA, as prescribed in the *Terrestrial Manual*, carried out on blood samples collected either once within 21 days prior to shipment with negative result, or on two occasions at least 14 days apart within 28 days prior to shipment, which demonstrated stable or declining antibody titres; or
 - b) were regularly vaccinated according to the recommendations of the manufacturer;

OR

- 2) were isolated for the 28 days prior to shipment and during this period the *animals* showed no sign of EVA.

Article 12.9.4.

Recommendations for the importation of equine semen

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the donors were kept for the 28 days prior to semen collection in an *establishment* where no equid has shown any clinical sign of EVA during that period and showed no clinical sign of EVA on the day of semen collection; and

- 1) were subjected between six and nine months of age to a test for EVA as prescribed in the *Terrestrial Manual*:

EITHER:

- a) with a negative result,

OR

- b) with a positive result, followed at least 14 days later by a second test showing a stable or decreasing titre;

and were immediately vaccinated against EVA and regularly revaccinated according to the recommendations of the manufacturer; or

- 2) were isolated and not earlier than seven days of commencing isolation were subjected to a test for EVA as prescribed in the *Terrestrial Manual* on a blood sample with negative results, immediately vaccinated for EVA, kept for 21 days following *vaccination* separated from other equids and regularly revaccinated according to the recommendations of the manufacturer; or
 - 3) were subjected to a test for EVA as prescribed in the *Terrestrial Manual* on a blood sample with negative results within 14 days prior to semen collection, and had been separated from other equids not of an equivalent EVA status for 14 days prior to blood sampling until the end of semen collection; or
 - 4) have been subjected to a test for EVA as prescribed in the *Terrestrial Manual* carried out on a blood sample with positive results and then: either
 - a) were subsequently test mated to two mares within six months prior to semen collection, which were subjected to two tests for EVA as prescribed in the *Terrestrial Manual* with negative results on blood samples collected at the time of test mating and again 28 days after the test mating; or
 - b) were subjected to a test for equine arteritis virus as prescribed in the *Terrestrial Manual* with negative results, carried out on semen collected within six months prior to collection of the semen to be exported; or
 - c) were subjected to a test for equine arteritis virus as prescribed in the *Terrestrial Manual* with negative results, carried out on semen collected within six months after the blood sample was collected, then immediately vaccinated, and revaccinated regularly; or
 - 5) for frozen semen, were subjected with negative results either:
 - a) to a test for EVA as prescribed in the *Terrestrial Manual* carried out on a blood sample taken not earlier than 14 days and not later than 12 months after the collection of the semen for export; or
 - b) to a test for equine arteritis virus as prescribed in the *Terrestrial Manual* carried out on an aliquot of the semen collected immediately prior to processing or on an aliquot of semen collected within 14 to 30 days after the first collection of the semen to be exported.
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CHAPTER 12.10.

GLANDERS

Article 12.10.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for glanders shall be six months.

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

Article 12.10.2.

Glanders free country

A country may be considered free from glanders when:

- 1) glanders is notifiable in the country;
- 2) no case of glanders has been reported during the past three years, or no case has been reported for a period of at least six months and a *surveillance* programme is in place demonstrating the absence of the *disease* in accordance with general recommendations on animal health *surveillance* (Chapter 1.4.).

Article 12.10.3.

Recommendations for importation from glanders free countries

For equines

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

- 1) showed no clinical sign of glanders on the day of shipment;
- 2) were kept for the six months prior to shipment, or since birth if less than six months of age, in the *exporting country*.

Article 12.10.4.

Recommendations for importation from countries considered infected with glanders

For equines

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

- 1) showed no clinical sign of glanders on the day of shipment;
- 2) were kept for the six months prior to shipment in an *establishment* where no case of glanders was reported during that period;

- 3) were subjected to a test as prescribed in the *Terrestrial Manual* for glanders with negative results, during the 30 days prior to shipment.
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CHAPTER 12.11.

VENEZUELAN EQUINE ENCEPHALOMYELITIS

Article 12.11.1.

General provisions

For the purposes of the *Terrestrial Code*, the *infective period* for Venezuelan equine encephalomyelitis (VEE) shall be 14 days, and the *incubation period* 5 days.

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

Article 12.11.2.

VEE free country

A country formerly infected with VEE may be considered free when:

- 1) VEE is notifiable and a *surveillance* system is in place and provides that all VEE suspected *animals* are investigated promptly; specimens are collected, and all specimens are submitted for *laboratory* examination, including virus isolation;
- 2) no case of VEE has been confirmed for the past two years;
- 3) no equine *animal* has been imported from any country where VEE has been confirmed during the past two years.

If a country considered free from VEE imports horses from an infected country, the *importing country* will not be considered infected, provided that the importation has been carried out in conformity with the provisions of Article 12.11.5.

Article 12.11.3.

Trade in commodities

Veterinary Authorities of VEE free countries may prohibit importation or transit through their territory, from countries considered infected with VEE, of domestic and wild equines, and may prohibit the importation into their territory, from countries considered infected with VEE, of semen and embryos/ova of domestic and wild equines.

Article 12.11.4.

Recommendations for importation from VEE free countries

For domestic and wild equines

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

- 1) showed no clinical sign of VEE on the day of shipment;
- 2) have not, during the past six months, been in any country in which VEE has occurred in the last two years;
- 3) have not been vaccinated against VEE within 60 days prior to shipment.

Article 12.11.5.

Recommendations for importation from countries considered infected with VEE

For domestic and wild equines

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

- 1) vaccinated *animals*:
 - a) were vaccinated against VEE not less than 60 days prior to shipment and were clearly identified with a permanent mark at the time of *vaccination*;
 - b) were kept in a *quarantine station* in the country of origin under official veterinary supervision for three weeks prior to shipment and remained clinically healthy during that period; any *animal* which showed a rise in temperature (taken daily) was subjected to a blood test for virus isolation, with negative results;
 - c) were protected from insect *vectors* during transportation to and from the *quarantine station* and during the quarantine period;
 - d) showed no clinical sign of VEE on the day of shipment;
- 2) unvaccinated *animals*:
 - a) were kept in a *quarantine station* in the country of origin under official veterinary supervision for three weeks prior to shipment and remained clinically healthy during that period; any *animal* which showed a rise in temperature (taken daily) was subjected to a blood test for virus isolation, with negative results;
 - b) were subjected to a diagnostic test for VEE with negative results conducted not less than 14 days after the commencement of quarantine;
 - c) were protected from insect *vectors* during transportation to and from the *quarantine station* and during the quarantine period;
 - d) showed no clinical sign of VEE on the day of shipment.

In addition, *animals* may be isolated in the *importing country* for seven days under official veterinary supervision. Any *animal* which shows a rise in temperature (taken daily) shall be subjected to a blood test for virus isolation.

SECTION 13.
LAGOMORPHA

CHAPTER 13.1.
MYXOMATOSIS

Article 13.1.1.

General provisions

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

Article 13.1.2.

Recommendations for the importation of domestic rabbits

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

- 1) showed no clinical sign of myxomatosis on the day of shipment;
- 2) were kept since birth, or for the six months prior to shipment, in an *establishment* where no case of myxomatosis was officially reported during that period.

Article 13.1.3.

Recommendations for the importation of skins and fur of domestic and wild rabbits

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the skins and fur were treated (dried and tanned) to ensure the destruction of the myxomatosis virus.

CHAPTER 13.2.

RABBIT HAEMORRHAGIC DISEASE

Article 13.2.1.

General provisions

For the purposes of the *Terrestrial Code*, the *infective period* for rabbit haemorrhagic disease (RHD) shall be 60 days.

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

Article 13.2.2.

RHD free country

A country may be considered free from RHD when it has been shown that the *disease* has not been present for at least one year, that no *vaccination* has been carried out in the previous 12 months, and that virological or serological surveys in both domestic and wild rabbits have confirmed the absence of the *disease*.

This period may be reduced to six months after the last *case* has been eliminated and *disinfection* procedures completed in countries adopting a *stamping-out policy*, and where the serological survey confirmed that the *disease* had not occurred in the wild rabbits.

Article 13.2.3.

RHD free establishment

An *establishment* may be considered free from RHD when it has been shown, by serological testing, that the *disease* has not been present for at least one year, and that no *vaccination* has been carried out in the previous 12 months. Such *establishments* should be regularly inspected by the *Veterinary Authority*.

A previously infected *establishment* may be considered free when six months have elapsed after the last *case* has been eliminated, and after:

- 1) a *stamping-out policy* has been adopted and carcasses have been disposed of by burning;
- 2) the rabbitry has been thoroughly disinfected and kept empty for at least six weeks;
- 3) the rabbitry is properly fenced to prevent the straying of wild lagomorphs into the rabbitry.

Article 13.2.4.

Trade in commodities

Veterinary Authorities of RHD free countries may prohibit importation or transit through their territory, from countries considered infected with RHD, of live rabbits, semen, *meat* and non-treated pelts.

Article 13.2.5.

Recommendations for importation from RHD free countriesFor domestic rabbits destined for breeding

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

- 1) showed no clinical sign of RHD on the day of shipment;
- 2) were kept in a RHD free country since birth or for at least the past 60 days.

Article 13.2.6.

Recommendations for importation from RHD free countriesFor day-old rabbits destined for breeding

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

- 1) showed no clinical sign of RHD on the day of shipment;
- 2) were born from female rabbits which had been kept in a country free from RHD for at least the past 60 days.

Article 13.2.7.

Recommendations for importation from countries considered infected with RHDFor domestic rabbits destined for breeding or pharmaceutical or surgical or agricultural or industrial use

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

- 1) showed no clinical sign of RHD on the day of shipment;

AND

- 2) were kept in a RHD free *establishment* where no clinical case of RHD was found when inspected by an *Official Veterinarian* immediately prior to shipment;

OR

- 3) were kept in an *establishment* where no case of RHD was reported during the 60 days prior to shipment and no clinical case of RHD was found when inspected by an *Official Veterinarian* immediately prior to shipment; and
- 4) were kept in an *establishment* where no *animal* has been vaccinated against RHD; and
- 5) were kept in an *establishment* where breeding rabbits (at least 10 percent of the *animals*) were subjected to the serological test for RHD with negative results during the 60 days prior to shipment; and
- 6) have not been vaccinated against RHD; or
- 7) were vaccinated against RHD immediately before shipment (the nature of the vaccine used and the date of *vaccination* shall also be stated in the certificate).

Article 13.2.8.

Recommendations for importation from countries considered infected with RHD

For day-old rabbits destined for breeding

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

- 1) were kept in a RHD free *establishment* where no clinical case of RHD was found when inspected by an *Official Veterinarian* immediately prior to shipment;

OR

- 2) were kept in an *establishment* where no case of RHD was reported during the 30 days prior to shipment and no clinical case of RHD was found when inspected by an *Official Veterinarian* immediately before shipment; and
- 3) have not been vaccinated against RHD; and
- 4) were born from female rabbits which were subjected to the serological test for RHD with negative results during the 60 days prior to shipment.

Article 13.2.9.

Recommendations for importation from countries considered infected with RHD

For domestic rabbits destined for immediate slaughter

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

- 1) showed no clinical sign of RHD on the day of shipment;
- 2) were kept in an *establishment* where no case of RHD was reported during the 60 days prior to shipment.

Article 13.2.10.

Recommendations for importation from countries considered infected with RHD

For semen

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

- 1) showed no clinical sign of RHD on the day of collection of the semen;
- 2) were subjected to the serological test for RHD with negative results during the 30 days prior to collection.

Article 13.2.11.

Recommendations for importation from countries considered infected with RHD

For domestic rabbit meat

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

- 1) were kept in an *establishment* where no case of RHD was reported during the 60 days prior to transport to the approved *abattoir*;
- 2) were subjected to ante-mortem inspections for RHD with favourable results;

3) showed no lesions of RHD at post-mortem inspections.

Article 13.2.12.

Recommendations for importation from RHD free countries

For non-treated pelts

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the pelts come from rabbits which had been kept in a country free from RHD for at least 60 days before *slaughter*.

Article 13.2.13.

Recommendations for importation from countries considered infected with RHD

For pelts

Veterinary Authorities of importing countries should require the presentation of an *international veterinary certificate* attesting that the pelts were subjected to a drying treatment for at least one month and a formalin-based treatment by spraying at a 3 percent concentration, or by fumigation carried out, not more than seven days prior to shipment.

SECTION 14.
OVIDAE AND CAPRIDAE

CHAPTER 14.1.
CAPRINE AND OVINE BRUCELLOSIS
(EXCLUDING *Brucella ovis*)

Article 14.1.1.

General provisions

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

Article 14.1.2.

Country or zone officially free from caprine and ovine brucellosis

1. Qualification

To qualify as officially free from caprine and ovine brucellosis, a country or *zone* should satisfy the following requirements:

- a) the occurrence or suspected occurrence of caprine and ovine brucellosis has been notifiable for at least five years; and
- b) all *flocks* of sheep and goats in the country or *zone* are under *official veterinary control*; and either
- c) 99.8 percent of these *flocks* are qualified as officially free from caprine and ovine brucellosis; or
- d) no *case* of brucellosis in sheep or goats has been reported for at least five years, and no sheep or goat has been vaccinated against the *disease* for at least three years.

2. Maintenance of officially free status

For a country or *zone* to maintain its status as officially free from caprine and ovine brucellosis, a serological survey should be carried out every year in the *establishments* or *abattoirs* on a representative sample of the caprine and ovine *flocks* of the country or *zone* sufficient to provide at least a 99 percent level of confidence of detecting caprine and ovine brucellosis if it is present at a prevalence rate exceeding 0.2 percent of the *flocks*.

However, for a country or *zone* qualified as officially free under point 1)d) above, maintenance testing is not required.

Article 14.1.3.

Sheep or goat flock officially free from caprine and ovine brucellosis

1. Qualification

To qualify as officially free from caprine and ovine brucellosis, a sheep or goat *flock* should satisfy the following requirements:

- a) it is under *official veterinary control*;
- b) no clinical, bacteriological or immunological evidence of caprine and ovine brucellosis has been found for at least one year;
- c) it contains only sheep or goats not vaccinated against brucellosis or permanently identified *animals* which were vaccinated more than two years ago;
- d) all sheep and goats over six months of age on the day of sampling have been subjected to a diagnostic test for brucellosis with negative results on two occasions, at an interval of not more than 12 months and not less than six months; however, for *flocks* situated in a country or *zone* qualified as officially free under point 1d) of Article 14.1.2., testing is not required;
- e) when qualified, it contains only sheep and goats born therein or introduced in conformity with the provisions of Article 14.1.5.

2. Maintenance of officially free status

For a *flock* to maintain its status as officially free from caprine and ovine brucellosis, a sample of the *animals* in the *flock* should be subjected each year to a diagnostic test for brucellosis, with negative results.

For a *flock* containing up to 1,000 *animals*, the sample should include:

- a) all non-castrated males over six months of age;
- b) all the *animals* introduced into the *flock* since the previous test;
- c) 25 percent of the pubescent females; the number of females included in the sample should not be less than 50, unless the *flock* contains fewer than 50 females, in which case all pubescent females should be included.

For a *flock* containing more than 1,000 *animals*, a serological survey should be carried out every year on a representative sample of the *animals* in the *flock* sufficient to provide a 99 percent level of confidence of detecting caprine and ovine brucellosis if it is present at a prevalence rate exceeding 0.2 percent.

Control tests should be carried out at up to three-year intervals if the *flock* is situated in a *zone* where 99 percent of *flocks* are officially free from caprine and ovine brucellosis and the remainder are submitted to an eradication programme.

However, for *flocks* situated in a country or *zone* qualified as officially free under point 1d) of Article 14.1.2., maintenance testing is not required.

Whatever the periodicity of control tests and the way the status has been obtained, sheep and goats should only be introduced into the *flocks* in conformity with the provisions of Article 14.1.5.

3. Suspension and recovery of officially free status

If a sheep or goat reacts positively to a diagnostic test for caprine and ovine brucellosis, the status of *flock* officially free from brucellosis shall be suspended and may not be recovered unless the following requirements have been fulfilled:

- a) all infected and in-contact *animals* were eliminated from the *flock* as soon as the result of the diagnostic test was known;

- b) all the remaining sheep and goats in the *flock* over six months of age on the day of sampling have been subjected to a diagnostic test for caprine and ovine brucellosis, with negative results, on two occasions, at an interval of not less than three months.

Article 14.1.4.

Sheep or goat flock free from caprine and ovine brucellosis1. Qualification

To qualify as free from caprine and ovine brucellosis, a sheep or goat *flock* should satisfy the following requirements:

- a) it is under *official veterinary control*;
- b) no clinical, bacteriological or immunological evidence of caprine and ovine brucellosis has been found for at least one year;
- c) if all or some of the sheep or goats have been vaccinated against caprine and ovine brucellosis, this was performed before seven months of age;
- d) all non-vaccinated sheep and goats over 6 months of age, and all vaccinated ones over 18 months of age on the day of sampling have been subjected to a diagnostic test for brucellosis with negative results on two occasions, at an interval of not more than 12 months and not less than 6 months;
- e) when qualified, it contains only sheep and goats born therein or introduced in conformity with the provisions of Article 14.1.6.

2. Maintenance of free status

For a *flock* to maintain its status as free from caprine and ovine brucellosis, a sample of the *animals* in the *flock* should be subjected each year to a diagnostic test for brucellosis with negative results.

For a *flock* containing up to 1,000 *animals*, the sample should include:

- a) all non-castrated males over 18 months of age if vaccinated, and over 6 months of age if unvaccinated;
- b) all *animals* introduced into the *flock* since the previous control;
- c) 25 percent of the pubescent females except vaccinated females less than 18 months of age; the number of females included in the sample should not be less than 50, unless the *flock* contains fewer than 50 females, in which case all pubescent females should be included in the sample.

For a *flock* containing more than 1,000 *animals*, a serological survey should be carried out every year on a representative sample of the *animals* in the *flock*, excluding vaccinated females less than 18 months of age, sufficient to provide a 99 percent level of confidence of detecting caprine and ovine brucellosis if it is present at a prevalence rate exceeding 0.2 percent.

Sheep and goats should only be introduced into the *flock* in conformity with the provisions of Article 14.1.6.

3. Suspension and recovery of free status

If a sheep or goat over 18 months of age, if vaccinated, or over 6 months of age, if not vaccinated, reacts positively to a diagnostic test for caprine and ovine brucellosis, the status of *flock* free from brucellosis shall be suspended, and may not be recovered unless the following requirements have been fulfilled:

- a) all infected and in-contact *animals* were eliminated from the *flock* as soon as the result of the diagnostic test was known;
- b) all the remaining sheep and goats in the *flock* over 18 months of age if vaccinated, and over six months of age if not vaccinated on the day of sampling, have been subjected to a diagnostic test for caprine and ovine brucellosis with negative results on two occasions, at an interval of not less than three months.

4. Change of status

For a *flock* free from caprine and ovine brucellosis to qualify as officially free, the *flock* should fulfil the following requirements for at least two years:

- a) it has been free from caprine and ovine brucellosis;
- b) *vaccination* against brucellosis has not been practised;
- c) any sheep or goats introduced into the *flock* satisfied the provisions of Article 14.1.5.;

and at the end of the period, all sheep and goats over six months of age on the day of sampling have been subjected to a diagnostic test for caprine and ovine brucellosis, with negative results.

Article 14.1.5.

Recommendations for the importation of sheep and goats for breeding or rearing (except castrated males) destined for flocks officially free from caprine and ovine brucellosis

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

- 1) showed no clinical sign of caprine and ovine brucellosis on the day of shipment;
- 2) come from a sheep or goat *flock* officially free from caprine and ovine brucellosis;

OR

- 3) come from a sheep or goat *flock* free from caprine and ovine brucellosis; and
- 4) have not been vaccinated against brucellosis, or, if vaccinated, that the last *vaccination* was performed at least two years previously; and
- 5) were isolated in the *establishment* of origin, and were subjected during that period to a diagnostic test for caprine and ovine brucellosis with negative results on two occasions, at an interval of not less than six weeks.

Article 14.1.6.

Recommendations for the importation of sheep and goats for breeding or rearing (except castrated males) destined for flocks not officially free from caprine and ovine brucellosis

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

- 1) showed no clinical sign of caprine and ovine brucellosis on the day of shipment;
- 2) come from a sheep or goat *flock* officially free from caprine and ovine brucellosis or a sheep or goat *flock* free from caprine and ovine brucellosis.

Article 14.1.7.

Recommendations for the importation of sheep and goats for slaughter (except castrated males)

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

- 1) showed no clinical sign of caprine and ovine brucellosis on the day of shipment;
- 2) come from a sheep or goat *flock* where no case of brucellosis has occurred during the 42 days prior to shipment.

Article 14.1.8.

Recommendations for the importation of semen of sheep and goats

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 caprine and ovine brucellosis on the day of collection of the semen;
 - b) were kept in a sheep or goat *flock* officially free from caprine and ovine brucellosis; or
 - c) were kept in a sheep or goat *flock* free from caprine and ovine brucellosis, and were subjected to two different diagnostic tests for caprine and ovine brucellosis on the same blood sample with negative results during the 30 days prior to collection;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 14.1.9.

Recommendations for the importation of embryos/ova of sheep and goats

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

- 1) the donor females:
 - a) were kept in a sheep or goat *flock* officially free from caprine and ovine brucellosis, and showed no clinical sign of brucellosis on the day of collection of the embryos/ova; or
 - b) were kept in a sheep or goat *flock* free from caprine and ovine brucellosis, showed no clinical sign of brucellosis on the day of collection, and were subjected to two different diagnostic tests for caprine and ovine brucellosis on the same blood sample taken within the 30 days prior to collection, with negative results;
 - 2) the embryos/ova were collected, processed and stored in conformity with the provisions of Chapters 4.7., 4.8. and 4.9., as relevant.
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CHAPTER 14.2.
CAPRINE ARTHRITIS/ENCEPHALITIS

Article 14.2.1.

General provisions

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

Article 14.2.2.

Recommendations for the importation of goats for breeding

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

- 1) the *animals* showed no clinical sign of caprine arthritis/encephalitis on the day of shipment;
 - 2) *animals* over one year of age were subjected to a diagnostic test for caprine arthritis/encephalitis with negative results during the 30 days prior to shipment; or
 - 3) caprine arthritis/encephalitis was neither clinically nor serologically diagnosed in the sheep and goats present in the *flocks* of origin during the past three years, and also that no sheep or goat from a *flock* of inferior health status was introduced into these *flocks* during that period.
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CHAPTER 14.3.
CONTAGIOUS AGALACTIA

Article 14.3.1.

Recommendations for the importation of sheep and goats

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

- 1) showed no clinical sign of contagious agalactia on the day of shipment;
 - 2) were kept since birth or for the six months prior to shipment in an *establishment* where no case of contagious agalactia was officially reported during that period;
 - 3) were kept in a *quarantine station* for the 21 days prior to shipment.
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CHAPTER 14.4.

CONTAGIOUS CAPRINE PLEUROPNEUMONIA

Article 14.4.1.

General provisions

For the purposes of the *Terrestrial Code*, contagious caprine pleuropneumonia (CCPP) is defined as a *disease* of goats caused by *Mycoplasma capricolum* subsp. *capripneumoniae*. The *incubation period* for the *disease* shall be 45 days (chronic carriers occur).

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

Article 14.4.2.

Country free from contagious caprine pleuropneumonia

A country may be considered free from CCPP when it has been shown that CCPP is not present and that one year has elapsed after the *slaughter* of the last affected *animal* for countries in which a *stamping-out policy* is practised.

Article 14.4.3.

Zone infected with contagious caprine pleuropneumonia

A *zone* shall be considered as infected with CCPP until at least 45 days have elapsed after the confirmation of the last case and the completion of a *stamping-out policy* and *disinfection* procedures.

Article 14.4.4.

Trade in commodities

Veterinary Authorities of CCPP free countries may prohibit importation or transit through their territory, from countries considered infected with CCPP, of domestic and wild goats, and may prohibit importation into their territory, from countries considered infected with CCPP, of semen of domestic and wild goats and of embryos/ova of domestic goats.

Article 14.4.5.

Recommendations for importation from CCPP free countries

For domestic goats

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

- 1) showed no clinical sign of CCPP on the day of shipment;
- 2) were kept in a CCPP free country since birth or for at least three months.

Article 14.4.6.

Recommendations for importation from CCPP free countriesFor wild goats

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

- 1) showed no clinical sign of CCPP on the day of shipment;
- 2) were kept in a CCPP free country;

if the *animals* originated from an area adjacent to a country considered infected with CCPP:

- 3) were kept in a *quarantine station* for at least the 45 days prior to shipment.

Article 14.4.7.

Recommendations for importation from countries considered infected with CCPPFor domestic goats

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

- 1) showed no clinical sign of CCPP on the day of shipment;
- 2) were subjected to a complement fixation test for CCPP 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 shipment (under study);
- 3) were isolated from other domestic goats from the day of the first complement fixation test until shipment;
- 4) were kept since birth, or for at least the past 45 days, in an *establishment* where no *case* of CCPP was officially reported during that period, and that the *establishment* of origin was not situated in a CCPP *infected zone*;
- 5) have not been vaccinated against CCPP; or
- 6) were vaccinated not more than four months prior to shipment. In this case, point 2 above is not required (under study).

Article 14.4.8.

Recommendations for importation from countries considered infected with CCPPFor goats for immediate slaughter

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

- 1) showed no clinical sign of CCPP on the day of shipment;
- 2) were kept since birth, or for at least the past 45 days, in an *establishment* where no *case* of CCPP was officially reported during that period, and that the *establishment* of origin was not situated in a CCPP *infected zone*.

Article 14.4.9.

Recommendations for importation from countries considered infected with CCPP

For wild goats

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

- 1) showed no clinical sign of CCPP on the day of shipment;
- 2) were kept, for at least the past 45 days prior to shipment, in a *quarantine station* where no *case* of CCPP was officially reported during that period, and that the *quarantine station* was not situated in a CCPP *infected zone*;
- 3) have not been vaccinated against CCPP; or
- 4) were vaccinated not more than four months prior to shipment (under study).

Article 14.4.10.

Recommendations for importation from CCPP free countries

For embryos/oocytes of goats

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

- 1) the donor *animals*:
 - a) showed no clinical sign of CCPP on the day of collection;
 - b) were kept in a CCPP free country;
- 2) the embryos/oocytes were collected in conformity with the provisions of Chapters 4.7., 4.8. and 4.9., as relevant.

Article 14.4.11.

Recommendations for importation from countries considered infected with CCPP

For embryos/oocytes of goats

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

- 1) the donor *animals*:
 - a) showed no clinical sign of CCPP on the day of collection; and
 - b) were isolated from other domestic goats from the day of the test until collection;
 - c) were kept since birth, or for at least the 45 days prior to collection, in an *establishment* where no *case* of CCPP was officially reported during that period, and that the *establishment* of origin was not situated in a CCPP *infected zone*;
- 2) the collection fluids and/or degenerated and unfertilized ova were subjected to a validated culture or PRC test for CCPP with negative results;
- 3) the embryos/oocytes were collected in conformity with the provisions of Chapters 4.7., 4.8. and 4.9., as relevant.

Article 14.4.12.

Recommendations for importation from countries considered infected with CCPP

For fresh meat of goats

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

- 1) which originate from *establishments* free of CCPP;
 - 2) which have been slaughtered in an approved *abattoir* and have been subjected to an ante-mortem inspection for CCPP with favourable results; and
 - 3) which showed no lesions of CCPP at the post-mortem inspection.
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CHAPTER 14.5.

***CHLAMYDOPHILA ABORTUS* INFECTION (ENZOOTIC ABORTION OF EWES, OVINE CHLAMYDIOSIS)**

Article 14.5.1.

General provisions

For the purposes of the *Terrestrial Code*, enzootic abortion of ewes (EAE), also known as ovine chlamydiosis or ovine enzootic abortion, is an *infection* of domestic sheep and goats by the bacterium *Chlamydophila abortus*.

Susceptible *animals* become infected through ingestion of infectious materials. In lambs and non-pregnant ewes, the *infection* remains latent until conception. Ewes exposed to *infection* late in pregnancy may not exhibit signs of *infection* until the subsequent pregnancy. Countries should take account of these risk factors.

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

Article 14.5.2.

Recommendations for the importation of sheep and/or goats for breeding

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

- 1) have remained since birth, or for the previous two years, in *establishments* where no EAE has been diagnosed during the past two years;
- 2) showed no clinical sign of EAE on the day of shipment;
- 3) were subjected to a diagnostic test for EAE with negative results within the 30 days prior to shipment.

Article 14.5.3.

Sheep flocks and/or goat herds free from EAE infection

To qualify as free from EAE *infection*, a sheep *flock* or goat *herd* shall satisfy the following requirements:

- 1) it is under official veterinary *surveillance*;
- 2) all sheep and goats showed no clinical evidence of EAE *infection* during the past two years;
- 3) a statistically valid number of sheep and goats over six months of age were subjected to a diagnostic test for EAE with negative results within the past six months;
- 4) all sheep or goats are permanently identified;
- 5) no sheep or goat has been added to the *flock* or *herd* since 30 days prior to the *flock* or *herd* test referred to in point 3 above unless:
 - a) either the additions were isolated from other members of the *flock* or *herd* in the *establishment* of origin for a minimum period of 30 days and then were subjected to a diagnostic test for EAE with negative results, before entry into the new *flock* or *herd*; or
 - b) they originated from an *establishment* of equal health status.

Article 14.5.4.

Recommendations for the importation of semen of sheep

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

- 1) the donor *animals*:
 - a) have been kept in *establishments* or *artificial insemination centres* free from EAE during the past two years, and have not been in contact with *animals* of a lower health status;
 - b) were subjected to a diagnostic test for EAE with negative results two to three weeks after collection of the semen;
 - 2) an aliquot of the semen to be exported was shown to be free of *Chlamydophila abortus*.
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CHAPTER 14.6.

MAEDI-VISNA

Article 14.6.1.

General provisions

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

Article 14.6.2.

Recommendations for the importation of sheep and goats for breeding

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

- 1) the *animals* showed no clinical sign of maedi-visna on the day of shipment;
 - 2) *animals* over one year of age were subjected to a diagnostic test for maedi-visna with negative results during the 30 days prior to shipment;
 - 3) maedi-visna was neither clinically nor serologically diagnosed in the sheep and goats present in the *flocks* of origin during the past three years, and also that no sheep or goat from a *flock* of inferior health status was introduced into these *flocks* during that period.
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CHAPTER 14.7.

OVINE EPIDIDYMITIS (*Brucella ovis*)

Article 14.7.1.

General provisions

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

Article 14.7.2.

Sheep flock free from ovine epididymitis

To qualify as free from ovine epididymitis, a sheep *flock* shall satisfy the following requirements:

- 1) it is under *official veterinary control*;
- 2) all sheep in the *flock* showed no clinical evidence of ovine epididymitis during the past year;
- 3) all sheep in the *flock* are permanently identified.

If some or all the males in the *flock* are vaccinated, the *flock* should still be regarded as free.

Article 14.7.3.

Recommendations for the importation of sheep for breeding or rearing (except castrated males)

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

- 1) the *animals* showed no clinical sign of ovine epididymitis on the day of shipment;
- 2) the *animals* come from a sheep *flock* free from ovine epididymitis;
- 3) for sheep over six months of age, the *animals* were isolated in the *establishment* of origin for the 30 days prior to shipment and were subjected to the diagnostic tests for *Brucella ovis* with negative results; or
- 4) for sheep from a *flock* other than that stated in point 2 above, the *animals* were isolated prior to shipment and were subjected to the diagnostic tests for *Brucella ovis* with negative results on two occasions, with an interval of 30 to 60 days between each test, the second test being performed during the 15 days prior to shipment.

Article 14.7.4.

Recommendations for the importation of semen of sheep

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 ovine epididymitis on the day of collection of the semen;
 - b) come from a sheep *flock* free from ovine epididymitis;

- c) were kept in the *exporting country* for the 60 days prior to collection, in an *establishment* or *artificial insemination centre* where all *animals* are free from ovine epididymitis;
 - d) were subjected to the diagnostic tests for *Brucella ovis* with negative results during the 30 days prior to collection;
- 2) the semen does not contain *Brucella ovis* or other *Brucella* antibodies.
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CHAPTER 14.8.

PESTE DES PETITS RUMINANTS

Article 14.8.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for the peste des petits ruminants (PPR) shall be 21 days.

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

Article 14.8.2.

PPR free country

A country may be considered free from PPR when it has been shown that PPR has not been present for at least the past three years.

This period shall be six months after the *slaughter* of the last affected *animal* for countries in which a *stamping-out policy* is practised with or without *vaccination* against PPR.

Article 14.8.3.

PPR infected zone

A *zone* shall be considered as infected with PPR until:

- 1) at least 21 days have elapsed after the confirmation of the last *case* and the completion of a *stamping-out policy* and *disinfection* procedures, or
- 2) six months have elapsed after the clinical recovery or *death* of the last affected *animal* if a *stamping-out policy* was not practised.

Article 14.8.4.

Trade in commodities

Veterinary Authorities of PPR free countries may prohibit importation or transit through their territory, from countries considered infected with PPR, of the following *commodities*:

- 1) domestic and wild ruminants;
- 2) semen of ruminants;
- 3) embryos/ova of ruminants;
- 4) *fresh meat* of domestic and wild ruminants;
- 5) *meat products* of domestic and wild ruminants which have not been processed to ensure the destruction of the PPR virus;
- 6) products of animal origin (from ruminants) intended for use in animal feeding or for agricultural or industrial use which have not been processed to ensure the destruction of the PPR virus;

- 7) products of animal origin (from ruminants) intended for pharmaceutical or surgical use which have not been processed to ensure the destruction of the PPR virus;
- 8) *pathological material* and biological products (from ruminants) which have not been processed to ensure the destruction of the PPR virus.

Article 14.8.5.

Recommendations for importation from PPR free countries

For domestic small ruminants

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 since birth or for at least the past 21 days.

Article 14.8.6.

Recommendations for importation from PPR free countries

For wild ruminants

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) come from a PPR free country;

if the country of origin has a common border with a country considered infected with PPR:

- 3) were kept in a *quarantine station* for the 21 days prior to shipment.

Article 14.8.7.

Recommendations for importation from countries considered infected with PPR

For domestic small ruminants

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 since birth, or for the past 21 days, in an *establishment* where no *case* of PPR was officially reported during that period, and that the *establishment* was not situated in a PPR *infected zone*; and/or
- 3) were kept in a *quarantine station* for the 21 days prior to shipment;
- 4) have not been vaccinated against PPR; or
- 5) were vaccinated against PPR:
 - a) not less than 15 days and not more than 4 months prior to shipment in the case of *animals for breeding or rearing*; or
 - b) not less than 15 days and not more than 12 months prior to shipment in the case of *animals for slaughter*.

Article 14.8.8.

Recommendations for importation from countries considered infected with PPRFor wild ruminants

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 *quarantine station* for the 21 days prior to shipment.

Article 14.8.9.

Recommendations for importation from PPR free countriesFor semen of domestic small ruminants

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 collection of the semen and during the following 21 days;
- 2) were kept in a PPR free country for not less than 21 days prior to collection.

Article 14.8.10.

Recommendations for importation from countries considered infected with PPRFor semen of domestic small ruminants

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 collection of the semen and during the following 21 days;
- 2) were kept in the *exporting country* for the 21 days prior to collection, in an *establishment* or *artificial insemination centre* where no case of PPR was officially reported during that period, and that the *establishment* or *artificial insemination centre* was not situated in a PPR *infected zone*;
- 3) have not been vaccinated against PPR; or
- 4) were vaccinated against PPR.

Article 14.8.11.

Recommendations for importation from PPR free countriesFor embryos of domestic small ruminants and cervids

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

- 1) the donor females were kept in an *establishment* located in a PPR free country at the time of collection of the embryos;
- 2) the embryos were collected, processed and stored in conformity with the provisions of Chapters 4.7., 4.8. and 4.9., as relevant.

Article 14.8.12.

Recommendations for importation from countries considered infected with PPR

For embryos of domestic small ruminants and cervids

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

- 1) the donor females:
 - a) were kept in an *establishment* to which no *animals* had been added for the 21 days prior to collection;
 - b) and all other *animals* in the *establishment* showed no clinical sign of PPR at the time of collection of the embryos and during the following 21 days;
 - c) have been vaccinated against PPR not less than 21 days and not more than 4 months prior to collection;
or
 - d) have not been vaccinated against PPR and were subjected to a diagnostic test for PPR with negative results at least 21 days after collection;
- 2) the embryos were collected, processed and stored in conformity with the provisions of Chapters 4.7., 4.8. and 4.9., as relevant.

Article 14.8.13.

Recommendations for importation from PPR free countries

For fresh meat or meat products of domestic small ruminants

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

- 1) which have been kept in the country since birth, or have been imported from a PPR free country;
- 2) which have been slaughtered in an approved *abattoir* and have been subjected to ante- and post-mortem inspections for PPR with favourable results.

Article 14.8.14.

Recommendations for importation from countries considered infected with PPR

For meat products of domestic small ruminants

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

- 1) the entire consignment of *meat products* comes from *animals* which have been slaughtered in an approved *abattoir* and have been subjected to ante- and post-mortem inspections for PPR with favourable results;
- 2) the *meat products* have been processed to ensure the destruction of the PPR virus;
- 3) the necessary precautions were taken after processing to avoid contact of the *meat* with any source of PPR virus.

Article 14.8.15.

Recommendations for importation from PPR free countriesFor products of animal origin (from small ruminants) intended for use in animal feeding or for agricultural or industrial use

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 since birth or for at least the past 21 days.

Article 14.8.16.

Recommendations for importation from PPR free countriesFor products of animal origin (from small ruminants) intended for pharmaceutical or surgical use

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

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

Article 14.8.17.

Recommendations for importation from countries considered infected with PPRFor meal and flour from blood, meat, defatted bones, hooves, claws and horns (from small ruminants)

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products have been processed using heat treatment to ensure the destruction of the PPR virus.

Article 14.8.18.

Recommendations for importation from countries considered infected with PPRFor hooves, claws, bones and horns, hunting trophies and preparations destined for museums (from small ruminants)

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

- 1) were completely dried and had no trace on them of skin, flesh or tendon; and/or
- 2) have been adequately disinfected.

Article 14.8.19.

Recommendations for importation from countries considered infected with PPRFor wool, coarse hair and other hair (from small ruminants)

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

- 1) come from *animals* which have not been kept in a PPR *infected zone*; or
- 2) have been processed to ensure the destruction of the PPR virus, in premises controlled and approved by the *Veterinary Authority* of the *exporting country*.

Article 14.8.20.

Recommendations for importation from countries considered infected with PPR

For raw hides and skins (from small ruminants)

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

- 1) come from *animals* which have not been kept in a PPR *infected zone*; or
- 2) have been adequately disinfected.

Article 14.8.21.

Recommendations for importation from countries considered infected with PPR

For products of animal origin (from small ruminants) intended for pharmaceutical or surgical use

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

- 1) have been processed to ensure the destruction of the PPR virus; or
 - 2) come from *animals* which did not come from a PPR *infected zone*;
 - 3) come from *animals* which have been slaughtered in an approved *abattoir* and have been subjected to ante- and post-mortem inspections for PPR with favourable results.
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CHAPTER 14.9.

SCRAPIE

Article 14.9.1.

General provisions and safe commodities

Scrapie is a neurodegenerative *disease* of sheep and goats. The main mode of transmission is from mother to offspring immediately after birth and to other susceptible neonates exposed to the birth fluids and tissues of an infected *animal*. Transmission occurs at a much lower frequency to adults exposed to the birth fluids and tissues of an infected *animal*. A variation in genetic susceptibility of sheep has been recognised. The *incubation period* of the *disease* is variable; however, it is usually measured in years. The duration in *incubation period* can be influenced by a number of factors including host genetics and strain of agent.

Scrapie is not considered to pose a risk to human health. The recommendations in this chapter are intended to manage the animal health risks associated with the presence of the scrapie agent in sheep and goats. The chapter excludes so-called 'atypical' scrapie because this condition is clinically, pathologically, biochemically and epidemiologically unrelated to 'classical' scrapie, may not be contagious and may, in fact, be a spontaneous degenerative condition of older sheep.

- 1) When authorising import or transit of the following *commodities* derived from sheep or goats and any products made from these *commodities* and containing no other tissues from sheep or goats, *Veterinary Authorities* should not require any scrapie-related conditions, regardless of the scrapie risk status of the sheep and goat populations of the *exporting country, zone or compartment*:
 - a) *in vivo* derived sheep embryos handled in accordance with Chapter 4.7. of this *Terrestrial Code*;
 - b) *meat* (excluding materials as referred to in Article 14.9.12.);
 - c) hides and skins;
 - d) gelatine;
 - e) collagen prepared from hides or skins;
 - f) tallow (maximum level of insoluble impurities of 0.15 percent in weight) and derivatives made from this tallow;
 - g) dicalcium phosphate (with no trace of protein or fat);
 - h) wool or fibre.
- 2) 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 scrapie risk status of the sheep and goat populations of the *exporting country, zone or compartment*.

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

Article 14.9.2.

Determination of the scrapie status of the sheep and goat populations of a country, zone, compartment or establishment

The scrapie status of the sheep and goat populations of a country, *zone, compartment or establishment* should be determined on the basis of the following criteria:

- 1) the outcome of a *risk assessment* identifying all potential factors for scrapie occurrence and their historic perspective, in particular the:
 - a) importation or introduction of sheep and goats or their semen, *in vivo* derived goat embryos or *in vitro* processed sheep and goat embryos/oocytes potentially infected with scrapie;
 - b) extent of knowledge of the population structure and husbandry practices of sheep and goats;
 - c) feeding practices, including consumption of *meat-and-bone meal* or *greaves* derived from ruminants;
 - d) importation of *milk* and *milk products* of sheep or goats origin intended for use in feeding of sheep and goats;
- 2) an on-going awareness programme for *veterinarians*, farmers, and workers involved in transportation, marketing and *slaughter* of sheep and goats to facilitate recognition and encourage reporting of all *animals* with clinical signs compatible with scrapie;
- 3) a *surveillance* and monitoring system including the following:
 - a) official veterinary *surveillance*, reporting and regulatory control in accordance with the provisions of Chapter 1.4.;
 - b) a *Veterinary Authority* with current knowledge of, and authority over, all *establishments* which contain sheep and goats in the whole country;
 - c) compulsory notification and clinical investigation of sheep and goats showing clinical signs compatible with scrapie;
 - d) examination, in accordance with the *Terrestrial Manual*, in a *laboratory* of appropriate material from sheep and goats older than 18 months displaying clinical signs compatible with scrapie;
 - e) maintenance of records including the number and results of all investigations for at least seven years.

Article 14.9.3.

Scrapie free country or zone

Countries or *zones* may be considered free from scrapie if within the said territory:

- 1) a *risk assessment*, as described in point 1 of Article 14.9.2., has been conducted, and it has been demonstrated that appropriate measures are currently in place and have been taken for the relevant period of time to manage any *risk* identified and points 2 and 3 have been complied with for the preceding seven years;

AND

- 2) one of the following conditions should be met:
 - a) the country or the *zone* have demonstrated historical freedom as follows:
 - i) scrapie has been notifiable for at least 25 years; and
 - ii) a formal programme of targeted *surveillance* and monitoring, which includes testing of sheep and goats displaying clinical signs compatible with scrapie and those over 18 months of age slaughtered, culled or found dead on farm, can be documented as having been in place for at least 10 years; and
 - iii) appropriate measures to prevent scrapie introduction can be documented as having been in place for at least 25 years; and
 - either scrapie has never been reported; or

- no case of scrapie has been reported for at least 25 years;
- b) for at least seven years, sheep and goats displaying clinical signs compatible with scrapie have been tested. Also a sufficient number of sheep and goats over 18 months of age, representative of slaughtered, culled or found dead on farm, have been tested annually, to provide a 95 percent level of confidence of detecting scrapie if it is present in that population at a prevalence rate exceeding 0.1 percent and no case of scrapie has been reported during this period; or
- c) all *establishments* containing sheep or goats have been accredited free as described in Article 14.9.5.;

AND

- 3) the feeding to sheep and goats of *meat-and-bone meal* or *greaves* of ruminant origin has been banned and effectively enforced in the whole country for at least seven years;

AND

- 4) introductions of sheep and goats or their semen, *in vivo* derived goat embryos or *in vitro* processed sheep and goat embryos/oocytes from countries or *zones* not free from scrapie are carried out in accordance with Articles 14.9.6., 14.9.7., 14.9.8. or 14.9.9., as relevant.

Article 14.9.4.

Compartment free from scrapie

To qualify as a *compartment* free from scrapie, all sheep and goats in a *compartment* should be certified by the *Veterinary Authority* as satisfying the following requirements:

- 1) all *establishments* within the *compartment* are free from scrapie according to Article 14.9.5.;
- 2) all *establishments* within the *compartment* are managed under a common *biosecurity plan* protecting them from introduction of scrapie, and the *compartment* has been approved by the *Veterinary Authority* in accordance with Chapters 4.3. and 4.4.;
- 3) introductions of sheep and goats are allowed only from free *establishments* or free countries;
- 4) introductions of *in vivo* derived goat embryos and *in vitro* processed sheep and goat embryos/oocytes are allowed either from free *establishments* or in accordance with Article 14.9.9.;
- 5) sheep and goat semen should be introduced into the *compartment* in accordance with Article 14.9.8.;
- 6) sheep and goats in the *compartment* should have no direct or indirect contact, including shared grazing, with sheep or goats from *establishments* not within the *compartment*.

Article 14.9.5.

Scrapie free establishment

To qualify as free from scrapie, an *establishment* of sheep and goats should satisfy the following requirements:

- 1) in the country or *zone* where the *establishment* is situated, the following conditions are fulfilled:
 - a) the *disease* is compulsorily notifiable;
 - b) an awareness, *surveillance* and monitoring system as referred to in Article 14.9.2. is in place;
 - c) affected sheep and goats are killed and completely destroyed;
 - d) the feeding to sheep and goats of *meat-and-bone meal* or *greaves* of ruminant origin has been banned and effectively enforced in the whole country for at least seven years;
 - e) an official accreditation scheme is in operation under the supervision of the *Veterinary Authority*, including the measures described in point 2 below;

- 2) in the *establishment* the following conditions have been complied with for at least seven years:
- a) sheep and goats are permanently identified and records maintained, to enable trace back to their *establishment* of birth;
 - b) records of movements of sheep and goats in and out of the *establishment* are maintained;
 - c) introductions of sheep and goats are allowed only from free *establishments* or *establishment* at an equal or higher stage in the process of accreditation;
 - d) introduction of *in vivo* derived goat embryos and *in vitro* processed sheep and goat embryos /oocytes should comply with Article 14.9.9.;
 - e) sheep and goat semen should be introduced into the *establishment* in accordance with Article 14.9.8.;
 - f) an *Official Veterinarian* inspects sheep and goats in the *establishments* and audits the records at least once a year;
 - g) no case of scrapie has been reported;
 - h) sheep and goats of the *establishments* should have no direct or indirect contact, including shared grazing, with sheep or goats from *establishments* of a lower status;
 - i) all culled sheep and goats over 18 months of age are inspected by an *Official Veterinarian*, and a proportion of those exhibiting wasting signs and all those exhibiting neurological signs are tested in a *laboratory* for scrapie. The selection of the sheep and goats to be tested should be made by the *Official Veterinarian*. Sheep and goats over 18 months of age that have died or have been killed for reasons other than routine *slaughter* should also be tested (including 'fallen' stock and those sent for emergency *slaughter*).

Article 14.9.6.

Recommendations for importation from countries or zones not considered free from scrapie

For sheep and goats for breeding or rearing

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the *animals* come from an *establishment* free from scrapie as described in Article 14.9.5.

Article 14.9.7.

Recommendations for importation from countries or zones not considered free from scrapie

For sheep and goats for slaughter

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

- 1) in the country or *zone*:
 - a) the *disease* is compulsorily notifiable;
 - b) an awareness, *surveillance* and monitoring system as referred to in Article 14.9.2. is in place;
 - c) affected sheep and goats are killed and completely destroyed;
- 2) the sheep and goats selected for export showed no clinical sign of scrapie on the day of shipment.

Article 14.9.8.

Recommendations for importation from countries or zones not considered free from scrapieFor semen of sheep and goats

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

- 1) the donor *animals*:
 - a) are permanently identified to enable trace back to their *establishment* of origin;
 - b) showed no clinical sign of scrapie at the time of semen collection;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 14.9.9.

Recommendations for importation from countries or zones not considered free from scrapieFor *in vivo* derived goat embryos and *in vitro* processed sheep and goat embryos/oocytes

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

- 1) in the country or *zone*:
 - a) the *disease* is compulsorily notifiable;
 - b) an awareness, *surveillance* and monitoring system as referred to in Article 14.9.2. is in place;
 - c) affected sheep and goats are killed and completely destroyed;
 - d) the feeding to sheep and goats of *meat-and-bone meal* or *greaves* of ruminant origin has been banned and effectively enforced in the whole country;
- 2) the donor *animals* either have been kept since birth in a free *establishment*, or meet the following conditions:
 - a) are permanently identified to enable trace back to their *establishment* of origin;
 - b) have been kept since birth in *establishments* in which no *case* of scrapie had been confirmed during their residency;
 - c) showed no clinical sign of scrapie at the time of embryo/oocyte collection;
- 3) the embryos/oocytes were collected, processed and stored in conformity with the provisions of Chapters 4.7., 4.8. and 4.9., as relevant.

Article 14.9.10.

Recommendations for importation from countries or zones not considered free from scrapieFor milk and milk products of sheep or goat origin intended for use in feeding of sheep and goats

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the *milk* and *milk products* come from scrapie free *establishments*.

Article 14.9.11.

Recommendations on meat-and-bone meal

Meat-and-bone meal containing any sheep or goat protein, or any feedstuffs containing that type of *meat-and-bone meal*, which originate from countries not considered free of scrapie should not be traded between countries for ruminant feeding.

Article 14.9.12.

Recommendations for importation from countries or zones not considered free from scrapie

For skulls including brains, ganglia and eyes, vertebral column including ganglia and spinal cord, tonsils, thymus, spleen, intestine, adrenal gland, pancreas, or liver, and protein products derived therefrom, from sheep and goats

- 1) These *commodities* should not be traded for use in ruminant feeds.
- 2) For purposes other than ruminant feeding, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that:
 - a) in the country or zone:
 - i) the *disease* is compulsorily notifiable;
 - ii) an awareness, *surveillance* and monitoring system as referred to in Article 14.9.2. is in place;
 - iii) affected sheep and goats are killed and completely destroyed;
 - b) the materials come from sheep and goats that showed no clinical sign of scrapie on the day of *slaughter*.

Article 14.9.13.

Recommendations for the importation of ovine and caprine materials destined for the preparation of biologicals

Veterinary Authorities of *importing countries* should require the presentation of an *international veterinary certificate* attesting that the products originate from sheep and goats born and raised in a scrapie free country, zone or *establishment*.

CHAPTER 14.10.

SHEEP POX AND GOAT POX

Article 14.10.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for sheep pox and goat pox shall be 21 days.

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

Article 14.10.2.

Sheep pox and goat pox free country

A country may be considered free from sheep pox and goat pox when it has been shown that sheep pox and goat pox has not been present for at least the past three years.

This period shall be six months after the *slaughter* of the last affected *animal* for countries in which a *stamping-out policy* is practised with or without *vaccination* against sheep pox and goat pox.

Article 14.10.3.

Sheep pox and goat pox infected zone

A *zone* shall be considered as infected with sheep pox and/or goat pox until:

- 1) at least 21 days have elapsed after the confirmation of the last *case* and the completion of a *stamping-out policy* and *disinfection* procedures; or
- 2) six months have elapsed after the clinical recovery or *death* of the last affected *animal* if a *stamping-out policy* was not practised.

Article 14.10.4.

Trade in commodities

Veterinary Authorities of sheep pox and goat pox free countries may prohibit importation or transit through their territory, from countries considered infected with sheep pox and goat pox, of domestic sheep and goats.

Article 14.10.5.

Recommendations for importation from sheep pox and goat pox free countries

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 sheep pox or goat pox on the day of shipment;
- 2) were kept in a sheep pox and goat pox free country since birth or for at least the past 21 days.

Article 14.10.6.

Recommendations for importation from countries considered infected with sheep pox and goat pox

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 sheep pox or goat pox on the day of shipment;
- 2) were kept since birth, or for the past 21 days, in an *establishment* where no *case* of sheep pox and goat pox was officially reported during that period, and that the *establishment* was not situated in a sheep pox and goat pox *infected zone*; or
- 3) were kept in a *quarantine station* for the 21 days prior to shipment;
- 4) have not been vaccinated against sheep pox and goat pox; or
- 5) were vaccinated using a vaccine complying with the standards described in the *Terrestrial Manual* not less than 15 days and not more than 4 months prior to shipment (the nature of the vaccine used, whether inactivated or modified live virus, and the virus types and strains included in the vaccine shall also be stated in the certificate).

Article 14.10.7.

Recommendations for importation from sheep pox and goat pox free countries

For semen of 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 sheep pox or goat pox on the day of collection of the semen and for the following 21 days;
- 2) were kept in a sheep pox and goat pox free country.

Article 14.10.8.

Recommendations for importation from countries considered infected with sheep pox and goat pox

For semen of 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 sheep pox or goat pox on the day of collection of the semen and for the following 21 days;
- 2) were kept in the *exporting country* for the 21 days prior to collection, in an *establishment* or *artificial insemination centre* where no *case* of sheep pox and goat pox was officially reported during that period, and that the *establishment* or *artificial insemination centre* was not situated in a sheep pox and goat pox *infected zone*;
- 3) have not been vaccinated against sheep pox and goat pox; or
- 4) were vaccinated using a vaccine complying with the standards described in the *Terrestrial Manual* (the nature of the vaccine used, whether inactivated or modified live virus, and the virus types and strains included in the vaccine shall also be stated in the certificate).

Article 14.10.9.

Recommendations for importation from countries considered infected with sheep pox and goat pox

For skins, fur, wool and hair (from sheep or goats)

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

- 1) come from *animals* which have not been kept in a sheep pox and goat pox *infected zone*; or
 - 2) have been processed to ensure the destruction of the sheep pox and goat pox virus, in premises controlled and approved by the *Veterinary Authority* of the *exporting country*.
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SECTION 15.

SUIDAE

CHAPTER 15.1.

AFRICAN SWINE FEVER

Article 15.1.1.

General provisions

The pig and its close relatives are the only natural hosts for African swine fever (ASF) virus. These include all varieties of *Sus scrofa*, both domestic and wild, warthogs (*Phacochoerus* spp.), bushpigs (*Potamochoerus* spp.) and giant forest hog (*Hylochoerus meinertzhageni*). For the purposes of this chapter, a distinction is made between domestic pigs (permanently captive and farmed free-range pigs) and wild pigs (including feral pigs and wild boar) as well as between *Sus scrofa* and African pig species.

All varieties of *Sus scrofa* are susceptible to the pathogenic effects of ASF virus, while the African wild pigs are not and act as reservoirs of the *infection*. Ticks of the genus *Ornithodoros* are natural hosts of the virus and act as biological vectors of the *infection*.

For the purpose of the *Terrestrial Code*, the *incubation period* in *Sus scrofa* is 15 days.

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

Article 15.1.2.

Determination of the ASF status of a country, zone or compartment

The ASF status of a country, *zone* or *compartment* can only be determined after considering the following criteria in domestic and wild pigs, as applicable:

- 1) ASF should be notifiable in the whole country, and all clinical signs suggestive of ASF should be subjected to appropriate field and *laboratory* investigations;
- 2) an on-going awareness programme should be in place to encourage reporting of all cases suggestive of ASF;
- 3) the *Veterinary Authority* should have current knowledge of, and authority over, all domestic pigs in the country, *zone* or *compartment*;
- 4) the *Veterinary Authority* should have current knowledge about the species, population and habitat of wild pigs in the country or *zone*.

Article 15.1.3.

ASF free country, zone or compartment

1. Historically free status

A country or *zone* may be considered free from ASF without formally applying a specific *surveillance* programme if the provisions of Article 1.4.6. are complied with.

2. Free status as a result of an eradication programme

A country or *zone* which does not meet the conditions of point 1 above or a *compartment* may be considered free from ASF when:

- a) there has been no *outbreak* of ASF during the past three years; this period can be reduced to 12 months when there is no evidence of tick involvement in the epidemiology of the *infection*;
- b) no evidence of ASFV *infection* has been found during the past 12 months;
- c) *surveillance* has been in place in domestic pigs for the past 12 months;
- d) imported domestic pigs comply with the requirements in Article 15.1.5. or Article 15.1.6.

AND

Based on *surveillance*, ASF *infection* has been demonstrated not to be present in any wild pig population in the country or *zone*, and:

- e) there has been no clinical evidence, nor virological evidence of ASF in wild pigs during the past 12 months;
- f) no seropositive wild pigs have been detected in the age class 6–12 months during the past 12 months;
- g) imported wild pigs comply with the requirements in Article 15.1.7.

Article 15.1.4.

Recovery of free status

Should an ASF *outbreak* occur in a free country, *zone* or *compartment*, the free status may be restored where *surveillance* has been carried out with negative results, either:

- 1) three months after the last *case* where a *stamping-out policy* is practised and in the case where ticks are suspected to be involved in the epidemiology of the *infection*, followed by acaricide treatment and the use of sentinel pigs; or
- 2) where a *stamping-out policy* is not practised, the provisions of point 2 of Article 15.1.3. should be followed.

AND

Based on *surveillance*, ASF *infection* has been demonstrated not to be present in any wild pig population in the country or *zone*.

Article 15.1.5.

Recommendations for importation from ASF free countries, zones or compartments

For domestic pigs

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

- 1) showed no clinical sign of ASF on the day of shipment;

- 2) were kept in an ASF free country, *zone* or *compartment* since birth or for at least the past 40 days.

Article 15.1.6.

Recommendations for importation from countries or zones considered infected with ASFFor domestic pigs

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

- 1) showed no clinical sign of ASF on the day of shipment;
- 2) were kept since birth or for the past 40 days in an ASF free *compartment*.

Article 15.1.7.

Recommendations for importation from ASF free countries or zonesFor wild pigs

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

- 1) showed no clinical sign of ASF on the day of shipment;
- 2) have been captured in an ASF free country or *zone*;

and, if the *zone* where the *animal* has been captured is adjacent to a *zone* with *infection* in wild pigs:

- 3) were kept in a *quarantine station* for 40 days prior to shipment, and were subjected to a virological test and a serological test performed at least 21 days after entry into the *quarantine station*, with negative results.

Article 15.1.8.

Recommendations for importation from ASF free countries, zones or compartmentsFor semen of domestic pigs

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

- 1) the donor *animals*:
 - a) were kept in an ASF free country, *zone* or *compartment* since birth or for at least 40 days prior to collection;
 - b) showed no clinical sign of ASF on the day of collection of the semen;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 15.1.9.

Recommendations for importation from countries or zones considered infected with ASFFor semen of domestic pigs

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

- 1) the donor *animals*:
 - a) were kept in an ASF free *compartment* since birth or for at least 40 days prior to collection;

- b) showed no clinical sign of ASF on the day of collection of the semen and for the following 40 days;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 15.1.10.

Recommendations for importation from ASF free countries, zones or compartments

For *in vivo* derived embryos of domestic pigs

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

- 1) the donor females:
 - a) were kept in an ASF free country, *zone* or *compartment* since birth or for at least 40 days prior to collection;
 - b) showed no clinical sign of ASF on the day of collection of the embryos;
- 2) the embryos were collected, processed and stored in conformity with the provisions of Chapters 4.7. and 4.9., as relevant.

Article 15.1.11.

Recommendations for importation from countries or zones considered infected with ASF

For *in vivo* derived embryos of domestic pigs

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

- 1) the donor females:
 - a) were kept in an ASF free *compartment* since birth or for at least 40 days prior to collection;
 - b) showed no clinical sign of ASF on the day of collection of the embryos and for the following 40 days;
- 2) the embryos were collected, processed and stored in conformity with the provisions of Chapters 4.7. and 4.9., as relevant.

Article 15.1.12.

Recommendations for importation from ASF free countries, zones or compartments

For fresh meat of domestic pigs

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

- 1) have been kept in an ASF free country, *zone* or *compartment* since birth or for at least the past 40 days, or which have been imported in accordance with Article 15.1.5. or Article 15.1.6.;
- 2) have been slaughtered in an approved *abattoir*, have been subjected to ante- and post-mortem inspections in accordance with Chapter 6.2., and have been found free of any sign suggestive of ASF.

Article 15.1.13.

Recommendations for importation from ASF free countries or zones**For fresh meat of wild pigs**

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

- 1) the entire consignment of *fresh meat* comes from *animals* which:
 - a) have been killed in an ASF free country or *zone*;
 - b) have been subjected to a post-mortem inspection in accordance with Chapter 6.2. in an approved examination centre, and have been found free of any sign suggestive of ASF;

and, if the *zone* where the *animal* has been killed is adjacent to a *zone* with *infection* in wild pigs:

- 2) a sample has been collected from every *animal* killed and has been subjected to a virological test and a serological test for ASF, with negative results.

Article 15.1.14.

Recommendations for the importation of meat products of pigs (either domestic or wild), or for products of animal origin (from fresh meat of pigs) intended for use in animal feeding, for agricultural or industrial use, or for pharmaceutical or surgical use, or for trophies derived from wild pigs

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

- 1) have been prepared:
 - a) exclusively from *fresh meat* meeting the conditions laid down in Articles 15.1.12. or 15.1.13., as relevant;
 - b) in a processing establishment:
 - i) approved by the *Veterinary Authority* for export purposes;
 - ii) processing only *meat* meeting the conditions laid down in Articles 15.1.12. or 15.1.13., as relevant;

OR

- 2) have been processed in an establishment approved by the *Veterinary Authority* for export purposes so as to ensure the destruction of the ASF virus, and that the necessary precautions were taken after processing to avoid contact of the product with any source of ASF virus.

Article 15.1.15.

Recommendations for the importation of products of animal origin (from pigs, but not derived from fresh meat) intended for use in animal feeding and for agricultural or industrial use

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

- 1) have been prepared:
 - a) exclusively from *fresh meat* meeting the conditions laid down in Articles 15.1.12. or 15.1.13., as relevant;
 - b) in a processing establishment:
 - i) approved by the *Veterinary Authority* for export purposes;

- ii) processing only *meat* meeting the conditions laid down in Articles 15.1.12. or 15.1.13., as relevant;

OR

- 2) have been processed in an establishment approved by the *Veterinary Authority* for export purposes so as to ensure the destruction of the ASF virus, and that the necessary precautions were taken after processing to avoid contact of the product with any source of ASF virus.

Article 15.1.16.

Recommendations for the importation of bristles (from pigs)

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

- 1) come from an ASF free country, *zone* or *compartment*; or
- 2) have been processed in an establishment approved by the *Veterinary Authority* for export purposes so as to ensure the destruction of the ASF virus, and that the necessary precautions were taken after processing to avoid contact of the product with any source of ASF virus.

Article 15.1.17.

Recommendations for the importation of litter and manure (from pigs)

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

- 1) come from an ASF free country, *zone* or *compartment*; or
 - 2) have been processed in an establishment approved by the *Veterinary Authority* for export purposes so as to ensure the destruction of the ASF virus, and that the necessary precautions were taken after processing to avoid contact of the product with any source of ASF virus.
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CHAPTER 15.2.

CLASSICAL SWINE FEVER

Article 15.2.1.

General provisions

For the purposes of *international trade*, classical swine fever (CSF) is defined as an *infection* of domestic pigs.

Domestic pig is defined as 'all domesticated pigs, permanently captive or farmed free range, used for the production of *meat* for consumption, for the production of other commercial products or for breeding these categories of pigs.

The pig is the only natural host for classical swine fever (CSF) virus. The definition of pig includes all varieties of *Sus scrofa*, both domestic and wild. For the purposes of this chapter, a distinction is made between domestic pig and wild pig (including feral pigs) populations.

Pigs exposed to CSF virus prenatally may be persistently infected throughout life and may have an *incubation period* of several months before showing signs of *disease*. Pigs exposed postnatally have an *incubation period* of 2–14 days, and are usually infective between post-*infection* days 5 and 14, but up to 3 months in cases of chronic *infections*.

For the purposes of *international trade*, a Member should not impose trade bans in response to a notification of *infection* with classical swine fever virus in wild pigs according to Article 1.1.3. of the *Terrestrial Code* after the Member confirms that Article 15.2.2. is appropriately implemented.

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

Article 15.2.2.

Determination of the CSF status of a country, zone or compartment

The CSF status of a country, *zone* or *compartment* can only be determined after considering the following criteria in domestic and wild pigs, as applicable:

- 1) CSF should be notifiable in the whole territory, and all clinical signs suggestive of CSF should be subjected to appropriate field and/or *laboratory* investigations;
- 2) an on-going awareness programme should be in place to encourage reporting of all cases suggestive of CSF;
- 3) the *Veterinary Authority* should have current knowledge of, and authority over, all domestic pigs in the country, *zone* or *compartment*;
- 4) the *Veterinary Authority* should have current knowledge about the population and habitat of wild pigs in the country or *zone*;
- 5) for domestic pigs, appropriate *surveillance*, capable of detecting the presence of *infection* even in the absence of clinical signs, and the risk posed by wild pigs, is in place; this may be achieved through a *surveillance* programme in accordance with Articles 15.2.23. to 15.2.28.;
- 6) for wild pigs, if present in the country or *zone*, a *surveillance* programme is in place according to Article 15.2.28., taking into account the presence of natural and artificial boundaries, the ecology of the wild pig population, and an assessment of the risks of *disease* spread.
- 7) Based on the assessed risk of spread within the wild pig population, and according to Article 15.2.26., the domestic pig population should be separated from the wild pig population by appropriate biosecurity measures to prevent transmission of CSF from wild to domestic pigs.

Article 15.2.3.

CSF free country, zone or compartment

A country, *zone* or *compartment* may be considered free from CSF when *surveillance* in accordance with Articles 15.2.23. to 15.2.28. has been in place for at least 12 months, and when:

- 1) there has been no *outbreak* of CSF in domestic pigs during the past 12 months;
- 2) no evidence of CSFV *infection* has been found in domestic pigs during the past 12 months;
- 3) no *vaccination* against CSF has been carried out in domestic pigs during the past 12 months unless there are means, validated to OIE standards (Chapter 2.8.3. of the *Terrestrial Manual*), of distinguishing between vaccinated and infected pigs;
- 4) imported domestic pigs comply with the requirements in Article 15.2.5. or Article 15.2.6.

Article 15.2.4.

Recovery of free status

Should a CSF *outbreak* occur in a free country, *zone* or *compartment*, the free status may be restored where *surveillance* in accordance with Articles 15.2.23. to 15.2.28. has been carried out with negative results either:

- 1) three months after the last *case* where a *stamping-out policy* without *vaccination* is practised;
- OR
- 2) where a *stamping-out policy* with emergency *vaccination* is practised:
 - a) three months after the last *case* and the *slaughter* of all vaccinated *animals*, or
 - b) three months after the last *case* without the *slaughter* of vaccinated *animals* where there are means, validated to OIE standards (Chapter 2.8.3. of the *Terrestrial Manual*), of distinguishing between vaccinated and infected pigs;
- OR
- 3) where a *stamping-out policy* is not practised, the provisions of Article 15.2.3. should be followed.

Article 15.2.5.

Recommendations for importation from countries, zones or compartments free of CSF

for domestic pigs

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

- 1) showed no clinical sign of CSF on the day of shipment;
- 2) were kept in a country, *zone* or *compartment* free of CSF since birth or for at least the past three months;
- 3) have not been vaccinated against CSF, nor are they the progeny of vaccinated sows, unless there are means, validated to OIE standards (Chapter 2.8.3. of the *Terrestrial Manual*), of distinguishing between vaccinated and infected pigs.

Article 15.2.6.

**Recommendations for importation from CSF infected countries or zones
for domestic pigs**

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

- 1) showed no clinical sign of CSF on the day of shipment;
- 2) were kept since birth or for the past three months in a CSF free *compartment*;
- 3) have not been vaccinated against CSF nor are they the progeny of vaccinated sows, unless there are means, validated to OIE standards (Chapter 2.8.3. of the *Terrestrial Manual*), of distinguishing between vaccinated and infected pigs.

Article 15.2.7.

Recommendations for the importation of wild pigs

Regardless of the CSF status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the *animals*:

- 1) showed no clinical sign of CSF on the day of shipment;
- 2) were kept in a *quarantine station* for 40 days prior to shipment, and were subjected to a virological test and a serological test performed at least 21 days after entry into the *quarantine station*, with negative results;
- 3) have not been vaccinated against CSF, unless there are means, validated to OIE standards (Chapter 2.8.3. of the *Terrestrial Manual*), of distinguishing between vaccinated and infected pigs.

Article 15.2.8.

**Recommendations for importation from countries, zones or compartments free of CSF
for semen of domestic pigs**

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

- 1) the donor *animals*:
 - a) were kept in a country, *zone* or *compartment* free of CSF since birth or for at least three months prior to collection;
 - b) showed no clinical sign of CSF on the day of collection of the semen;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 15.2.9.

**Recommendations for importation from CSF infected countries or zones
for semen of domestic pigs**

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

- 1) the donor *animals*:
 - a) were kept in a *compartment* free of CSF since birth or for at least three months prior to collection;
 - b) showed no clinical sign of CSF on the day of collection of the semen and for the following 40 days;

- c) met one of the following conditions:
 - i) have not been vaccinated against CSF and were subjected to a serological test performed at least 21 days after collection, with negative results; or
 - ii) have been vaccinated against CSF and were subjected to a serological test in accordance with the *Terrestrial Manual* performed at least 21 days after collection and it has been conclusively demonstrated that any antibody is due to the vaccine; or
 - iii) have been vaccinated against CSF and were subjected to a virological test performed in accordance with the *Terrestrial Manual* on a sample taken on the day of collection and it has been conclusively demonstrated that the boar is negative for virus genome;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 15.2.10.

Recommendations for importation from countries, zones or compartments free of CSF

for *in vivo* derived embryos of domestic pigs

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

- 1) the donor females showed no clinical sign of CSF on the day of collection of the embryos;
- 2) the embryos were collected, processed and stored in conformity with the provisions of Chapters 4.7. and 4.9., as relevant.

Article 15.2.11.

Recommendations for importation from CSF infected countries or zones

for *in vivo* derived embryos of domestic pigs

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

- 1) the donor females:
 - a) were kept in a *compartment* free of CSF since birth or for at least three months prior to collection;
 - b) showed no clinical sign of CSF on the day of collection of the embryos and for the following 40 days;
 - c) and either:
 - i) have not been vaccinated against CSF and were subjected, with negative results, to a serological test performed at least 21 days after collection; or
 - ii) have been vaccinated against CSF and were subjected to a serological test performed at least 21 days after collection and it has been conclusively demonstrated by means, validated to OIE standards (Chapter 2.8.3. of the *Terrestrial Manual*), that any antibody is due to the vaccine;
- 2) the embryos were collected, processed and stored in conformity with the provisions of Chapters 4.7. and 4.9., as relevant.

Article 15.2.12.

Recommendations for importation from countries, zones or compartments free of CSFfor fresh meat of domestic pigs

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

- 1) have been kept in a country, *zone* or *compartment* free of CSF, or which have been imported in accordance with Article 15.2.5. or Article 15.2.6.;
- 2) have been slaughtered in an approved *abattoir*, have been subjected to ante- and post-mortem inspections in accordance with Chapter 6.2. and have been found free of any sign suggestive of CSF.

Article 15.2.13.

Recommendations for the importation of fresh meat of wild pigs

Regardless of the CSF status of the country of origin, *Veterinary Authorities* should require the presentation of an *international veterinary certificate* attesting that the entire consignment of *fresh meat* comes from *animals*:

- 1) which have been subjected to a post-mortem inspection in accordance with Chapter 6.2. in an approved examination centre, and have been found free of any sign suggestive of CSF;
- 2) from each of which a sample has been collected and has been subjected to a virological test and a serological test for CSF, with negative results.

Article 15.2.14.

Recommendations for the importation of meat and meat products of pigs, or for products of animal origin (from fresh meat of pigs) intended for use in animal feeding, for agricultural or industrial use, or for pharmaceutical or surgical use

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

- 1) have been prepared:
 - a) exclusively from *fresh meat* meeting the conditions laid down in Article 15.2.12.;
 - b) in a processing establishment:
 - i) approved by the *Veterinary Authority* for export purposes;
 - ii) processing only *meat* meeting the conditions laid down in Article 15.2.12.;

OR

- 2) have been processed in an establishment approved by the *Veterinary Authority* for export purposes so as to ensure the destruction of the CSF virus in conformity with one of the procedures referred to in Article 15.2.21., and that the necessary precautions were taken after processing to avoid contact of the product with any source of CSF virus.

Article 15.2.15.

Recommendations for the importation of products of animal origin (from pigs, but not derived from fresh meat) intended for use in animal feeding

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

- 1) originated from domestic pigs in a CSF free country, *zone* or *compartment* and have been prepared in a processing establishment approved by the *Veterinary Authority* for export purposes; or
- 2) have been processed in an establishment approved by the *Veterinary Authority* for export purposes so as to ensure the destruction of the CSF virus in accordance with Article 15.2.20., and that the necessary precautions were taken after processing to avoid contact of the product with any source of CSF virus.

Article 15.2.16.

Recommendations for the importation of products of animal origin (from pigs, but not derived from fresh meat) intended for agricultural or industrial use

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

- 1) originated from domestic pigs in a CSF free country, *zone* or *compartment* and have been prepared in a processing establishment approved by the *Veterinary Authority* for export purposes; or
- 2) have been processed in an establishment approved by the *Veterinary Authority* for export purposes so as to ensure the destruction of the CSF virus (under study), and that the necessary precautions were taken after processing to avoid contact of the product with any source of CSF virus.

Article 15.2.17.

Recommendations for the importation of bristles

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

- 1) originated from domestic pigs in a CSF free country, *zone* or *compartment* and have been prepared in a processing establishment approved by the *Veterinary Authority* for export purposes; or
- 2) have been processed in an establishment approved by the *Veterinary Authority* for export purposes so as to ensure the destruction of the CSF virus (under study), and that the necessary precautions were taken after processing to avoid contact of the product with any source of CSF virus.

Article 15.2.18.

Recommendations for the importation of litter and manure

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

- 1) originated from domestic pigs in a CSF free country, *zone* or *compartment* and have been prepared in a processing establishment approved by the *Veterinary Authority* for export purposes; or
- 2) have been processed in an establishment approved by the *Veterinary Authority* for export purposes so as to ensure the destruction of the CSF virus (under study), and that the necessary precautions were taken after processing to avoid contact of the product with any source of CSF virus.

Article 15.2.19.

Recommendations for the importation of skins and trophies

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

- 1) originated from domestic pigs in a CSF free country, *zone* or *compartment* and have been prepared in a processing establishment approved by the *Veterinary Authority* for export purposes; or
- 2) have been processed in an establishment approved by the *Veterinary Authority* for export purposes so as to ensure the destruction of the CSF virus in conformity with one of the procedures referred to in Article 15.2.22., and that the necessary precautions were taken after processing to avoid contact of the product with any source of CSF virus.

Article 15.2.20.

Procedures for the inactivation of the CSF virus in swill

For the inactivation of CSF viruses likely to be present in swill, one of the following procedures should be used:

- 1) the swill should be maintained at a temperature of at least 90°C for at least 60 minutes, with continuous stirring; or
- 2) the swill should be maintained at a temperature of at least 121°C for at least 10 minutes at an absolute pressure of 3 bar.

Article 15.2.21.

Procedures for the inactivation of the CSF virus in meat

For the inactivation of viruses present in *meat*, one of the following procedures should be used:

1. Heat treatment

Meat shall be subjected to one of the following treatments:

- a) heat treatment in a hermetically sealed container with a F_0 value of 3.00 or more;
- b) heat treatment at a minimum temperature of 70°C, which should be reached throughout the *meat*.

2. Natural fermentation and maturation

The *meat* should be subjected to a treatment consisting of natural fermentation and maturation having the following characteristics:

- a) an a_w value of not more than 0.93, or
- b) a pH value of not more than 6.0.

Hams should be subjected to a natural fermentation and maturation process for at least 190 days and loins for 140 days.

3. Dry cured pork meat

- a) Italian style hams with bone-in should be cured with salt and dried for a minimum of 313 days.
- b) Spanish style pork *meat* with bone-in should be cured with salt and dried for a minimum of 252 days for Iberian hams, 140 days for Iberian shoulders, 126 days for Iberian loin, and 140 days for Serrano hams.

Article 15.2.22.

Procedures for the inactivation of the CSF virus in skins and trophies

For the inactivation of CSF viruses likely to be present in skins and trophies, one of the following procedures should be used:

- 1) boiling in water for an appropriate time so as to ensure that any matter other than bone, tusks or teeth is removed;
- 2) gamma irradiation at a dose of at least 20 kiloGray at room temperature (20°C or higher);
- 3) soaking, with agitation, in a 4 percent (w/v) solution of washing soda (sodium carbonate – Na₂CO₃) maintained at pH 11.5 or above for at least 48 hours;
- 4) soaking, with agitation, in a formic acid solution (100 kg salt [NaCl] and 12 kg formic acid per 1,000 litres water) maintained at below pH 3.0 for at least 48 hours; wetting and dressing agents may be added;
- 5) in the case of raw hides, salting for at least 28 days with sea salt containing 2 percent washing soda (sodium carbonate – Na₂CO₃).

Article 15.2.23.

Surveillance: introduction

Articles 15.2.23. to 15.2.28. define the principles and provide a guide on the *surveillance* for CSF, complementary to Chapter 1.4., applicable to Members seeking to determine their CSF status. This may be for the entire country or a *zone*. Guidance for Members seeking free status following an *outbreak* and for the maintenance of CSF status is also provided.

The impact and epidemiology of CSF differ widely in different regions of the world, and it is, therefore, impossible to provide specific recommendations for all situations. The *surveillance* strategies employed for demonstrating freedom from CSF at an acceptable level of confidence will need to be adapted to the local situation. For example, the approach should be tailored in order to prove freedom from CSF for a country or *zone* where wild pigs provide a potential reservoir of *infection*, or where CSF is present in adjacent countries. The method should examine the epidemiology of CSF in the region concerned and adapt to the specific risk factors encountered. This should include provision of scientifically based supporting data. There is, therefore, latitude available to Members to provide a well-reasoned argument to prove that absence of classical swine fever virus (CSFV) *infection* is assured at an acceptable level of confidence.

Surveillance for CSF should be in the form of a continuing programme designed to establish that a population in a country, *zone* or *compartment* is free from CSFV *infection* or to detect the introduction of CSFV into a population already recognized as free. Consideration should be given to the specific characteristics of CSF epidemiology which include: the role of swill feeding and the impact of different production systems on *disease* spread, the role of semen in transmission of the virus, the lack of pathognomonic gross lesions and clinical signs, the frequency of clinically inapparent *infections*, the occurrence of persistent and chronic *infections*, and the genotypic, antigenic, and virulence variability exhibited by different strains of CSFV. Serological cross-reactivity with other pestiviruses has to be taken into consideration when interpreting data from serological surveys. A common route by which ruminant pestiviruses can infect pigs is the use of vaccines contaminated with bovine viral diarrhoea virus (BVDV).

For the purposes of this chapter, virus *infection* means presence of CSFV as demonstrated directly by virus isolation, the detection of virus antigen or virus nucleic acid, or indirectly by seroconversion which is not the result of *vaccination*.

Article 15.2.24.

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 to an accredited *laboratory* as described in the *Terrestrial Manual*.

2) The CSF *surveillance* programme should:

- a) include an early warning system throughout the production, marketing and processing chain for reporting suspicious cases. Farmers and workers, who have day-to-day contact with livestock, as well as diagnosticians, should report promptly any suspicion of CSF to the *Veterinary Authority*. They should be supported directly or indirectly (e.g. through private *veterinarians* or *veterinary para-professionals*) by government information programmes and the *Veterinary Authority*. Since many strains of CSFV do not induce pathognomonic gross lesions or clinical signs, cases in which CSF cannot be ruled out should be immediately investigated employing clinical, pathological, and *laboratory* diagnosis. This requires that sampling kits and other equipment are available to those responsible for *surveillance*. Personnel responsible for *surveillance* should be able to call for assistance from a team with expertise in CSF diagnosis, epidemiological evaluation, and control;
- b) implement, when relevant, regular and frequent clinical inspections and serological testing of high-risk groups of *animals* (for example, where swill feeding is practised), or those adjacent to a CSF infected country or *zone* (for example, bordering areas where infected wild pigs are present).

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 CSFV. The rate at which such suspicious cases are likely to occur will differ between epidemiological situations and cannot, therefore, be reliably predicted. Recognitions for freedom from CSFV *infection* should, as a 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 standstill orders, etc.).

Article 15.2.25.

Surveillance strategies

1. Introduction

There are two basic strategies that can be employed for CSF *surveillance* depending on the purpose of the Member for seeking recognition of freedom from CSF. In countries free of CSF, *surveillance* programmes should be designed to detect the introduction of CSFV into domestic or wild swine. The optimal strategy to meet this objective is most often targeted *surveillance*.

The population covered by *surveillance* aimed at detecting *disease* and *infection* should include domestic and wild pig populations within the country or *zone* to be recognised as free from CSFV *infection*. Such *surveillance* may involve opportunistic testing of samples submitted for other purposes, but a more efficient and effective strategy is one which includes targeted *surveillance*.

Surveillance is targeted to the pig population which presents the highest risk of *infection* (for example, swill fed farms, pigs reared outdoors or farms in proximity to infected wild pigs). Each Member will need to identify its individual risk factors. These may include: temporal and spatial distribution of past *outbreaks*, pig movements and demographics, etc.

For reasons of cost, the longevity of antibody levels, as well as the existence of clinically inapparent *infections* and difficulties associated with differential diagnosis of other *diseases*, serology is often the most effective and efficient *surveillance* methodology. In some circumstances, which will be discussed later, clinical and virological *surveillance* may also have value.

The Member should justify the *surveillance* strategy chosen as adequate to detect the presence of CSFV *infection* in accordance with Chapter 1.4. and the epidemiological situation. Cumulative survey results in combination with the results of passive *surveillance*, over time, will increase the level of confidence in the *surveillance* strategy. If a Member wishes to apply for recognition by other Members of a specific *zone* within the country as being free from CSFV *infection*, the design of the *surveillance* strategy and the basis for any sampling process would need to be aimed at the population within the *zone*.

For random surveys, the design of the sampling strategy will need to incorporate 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 Member 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 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 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 for the *vaccination/infection* history and production class of *animals* in the target population.

Irrespective of the testing system employed, the *surveillance* system design should anticipate the occurrence of false positive reactions. This is especially true of the serological diagnosis of CSF because of the recognized cross-reactivity with ruminant pestiviruses. There needs to be an effective procedure for following up positives to ultimately determine with a high level of confidence, whether or not they are indicative of CSFV *infection*. This should involve confirmatory and differential tests for pestiviruses, as well as further investigations concerning the original sampling unit as well as *animals* which may be epidemiologically linked.

2. Clinical and virological surveillance

Beyond their role in targeted *surveillance*, clinical and virological *surveillance* for CSF has two aims: a) to shorten the period between introduction of CSF virus into a *disease* free country or *zone* and its detection, and b) to confirm that no unnoticed *outbreaks* have occurred.

In the past, clinical identification of *cases* was the cornerstone of early detection of CSF. However, emergence of low virulence strains of CSF, as well as new *diseases* – such as post-weaning multisystemic wasting syndrome and porcine dermatitis and nephropathy syndrome – have made such reliance less effective, and, in countries where such *diseases* are common, can add significant risk of masking the presence of CSF.

The spectrum of *disease* signs and gross pathology seen in CSF *infections*, along with the plethora of other agents that can mimic CSF, renders the value of clinical examination alone somewhat inefficient as a *surveillance* tool. These factors, along with the compounding effects of concurrent *infections* and *diseases* caused by ruminant pestiviruses, dictate the need for *laboratory* testing in order to clarify the status of CSF suspects detected by clinical monitoring.

Nevertheless, clinical presentation should not be ignored as a tool for early detection; in particular, any *cases* where clinical signs or lesions consistent with CSF are accompanied by high morbidity and/or mortality should be investigated without delay. In CSFV *infections* involving low virulence strains, high mortality may only be seen in young *animals*. Otherwise close physical examination of susceptible *animals* is useful as a selection criteria for CSF *surveillance*, particularly in diagnostic *laboratories* or *slaughter* establishments or when applied to high risk populations such as swill feeding operations.

The difficulties in detecting chronic *disease* manifested by non-specific clinical signs and delayed seroconversion and seronegativity, in persistently infected piglets, both of which may be clinically normal, makes virological investigation essential. As part of a *herd* investigation, such *animals* are likely to be in a minority and would not confound a diagnosis based on serology. Individually or as part of recently mixed batches, such *animals* may, however, escape detection by this method. A holistic approach to investigation, taking note of *herd* history, pig, personnel and *vehicle* movements and disease status in neighbouring *zones* or countries, can also assist in targeting *surveillance* in order to increase efficiency and enhance the likelihood of early detection.

The labour-intensive nature of clinical, pathological and virological investigations, along with the smaller 'window of opportunity' inherent in virus, rather than antibody detection, has, in the past, resulted in greater emphasis being placed on mass serological screening as the best method for *surveillance*. However, *surveillance* based on clinical and pathological inspection and virological testing should not be underrated. If targeted at high risk groups in particular, it provides an opportunity for early detection that can considerably reduce the subsequent spread of *disease*. *Herds* predominated by adult *animals*, such as nucleus *herds* and

artificial insemination studs, are particularly useful groups to monitor, since *infection* by low virulence viruses in such groups may be clinically inapparent, yet the degree of spread may be high.

Clinical and virological monitoring may also provide a high level of confidence of rapid detection of *disease* if a sufficiently large number of clinically susceptible *animals* is examined. In particular, molecular detection methods are increasingly able to offer the possibility of such large-scale screening for the presence of virus, at reasonable cost.

Wild pigs and, in particular, those with a wholly free-living existence, rarely present the opportunity for clinical observation, but should form part of any *surveillance* scheme and should, ideally, be monitored for virus as well as antibody.

Vaccine design and diagnostic methodologies, and in particular methods of virus detection, are increasingly reliant on up-to-date knowledge of the molecular, antigenic and other biological characteristics of viruses currently circulating and causing *disease*. Furthermore, epidemiological understanding of the pathways of spread of CSFV can be greatly enhanced by molecular analyses of viruses in endemic areas and those involved in *outbreaks* in *disease* free areas. It is therefore essential that CSFV isolates are sent regularly to the regional OIE Reference Laboratory for genetic and antigenic characterisation.

3. Serological surveillance

Serological *surveillance* aims at detecting antibodies against CSFV. Positive CSFV antibody test results can have five possible causes:

- a) natural *infection* with CSFV;
- b) legal or illegal *vaccination* against CSF;
- c) maternal antibodies derived from an immune sow (maternal antibodies) are usually found only up to 4.5 months of age, but, in some individuals, maternal antibodies can be detected for considerably longer periods;
- d) cross-reactions with other pestiviruses;
- e) non-specific reactors.

The *infection* of pigs with other pestiviruses may complicate a *surveillance* strategy based on serology. Antibodies to bovine viral diarrhoea virus (BVDV) and Border disease virus (BDV) can give positive results in serological tests for CSF, due to common antigens. Such samples will require differential tests to confirm their identity. Although persistently infected immunotolerant pigs are themselves seronegative, they continuously shed virus, so the prevalence of antibodies at the *herd* level will be high. Chronically infected pigs may have undetectable or fluctuating antibody levels.

It may be possible to use sera collected for other survey purposes for CSF *surveillance*. However, the principles of survey design described in this chapter and the requirement for statistical validity 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 *infection* by field strains or other pestiviruses. Because clustering may signal field strain *infection*, the investigation of all instances should be incorporated in the survey design. Clustering of positive *animals* is always epidemiologically significant and therefore should be investigated.

In countries or *zones* that are moving towards freedom, serosurveillance can provide valuable information on the disease status and efficacy of any control programme. Targeted serosurveillance of young stock will indicate whether newly circulating virus is present, although the presence of maternal antibody will also need to be considered. If conventional attenuated vaccine is currently being used or has been used in the recent past, serology aimed at detecting the presence of field virus will likewise need to be targeted at unvaccinated *animals* and after the disappearance of maternal antibody. General usage in such situations may also be used to assess levels of vaccine coverage.

Vaccines also exist which, when used in conjunction with dedicated serological tests, may allow discrimination between vaccinal antibody and that induced by field *infection*. Such tools, described in the *Terrestrial Manual*, will need to be fully validated. They do not confer the same degree of protection as that

provided by conventional vaccines, particularly with respect to preventing transplacental *infections*. Furthermore, serosurveillance using such differentiation requires cautious interpretation on a *herd* basis.

The results of random or targeted serological surveys are important in providing reliable evidence that no CSFV *infection* is present in a country or *zone*. It is therefore essential that the survey be thoroughly documented.

The free status should be reviewed whenever evidence emerges to indicate that changes which may alter the underlying assumption of continuing freedom, has occurred. Such changes include but are not limited to:

- a) an emergence or an increase in the prevalence of CSF in countries or *zones* from which live pigs or products are imported;
- b) an increase in the volume of imports or a change in their country or *zone* of origin;
- c) an increase in the prevalence of CSF in the domestic or wild pigs of adjacent countries or *zones*;
- d) an increased entry from, or exposure to, infected wild pig populations of adjacent countries or *zones*.

Article 15.2.26.

Countries, zones or compartments declaring freedom from CSF: additional surveillance procedures

1. Country or zone free of CSF

In addition to the general conditions described above, a Member seeking recognition of CSF freedom for the country or a *zone*, whether or not *vaccination* had been practised, 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 in and around the country or *zone* and will be planned and implemented according to the general conditions and methods described in this chapter, to demonstrate the absence of CSFV *infection* in domestic and wild pig populations. This requires the support of a national or other *laboratory* able to undertake identification of CSFV *infection* through virus detection and serological tests described in the *Terrestrial Manual*.

2. Compartment free of CSF

The objective of *surveillance* is to demonstrate the absence of CSFV *infection* in the *compartment*. The provisions of Chapter 4.3. should be followed. The effective separation of the two subpopulations should be demonstrated. To this end, a *biosecurity plan* that includes but is not limited to the following provisions should be implemented:

- a) proper containment of domestic pigs;
- b) control of movement of *vehicles* with cleaning and *disinfection* as appropriate;
- c) control of personnel entering into the *establishments* and awareness of risk of fomite spread;
- d) prohibition of introduction to the *establishments* of wild caught *animals* and their products;
- e) record of animal movements into and out of *establishments*;
- f) information and training programmes for farmers, processors, *veterinarians*, etc.

The *biosecurity plan* implemented also requires internal and external monitoring by the *Veterinary Authority*. This monitoring should include:

- g) periodic clinical and serological monitoring of *herds* in the country or *zone*, and adjacent wild pig populations following these recommendations;
- h) *herd* registration;
- i) official accreditation of *biosecurity plans*;

- j) periodic monitoring and review.

Monitoring the CSF status of wild and domestic pig populations outside the *compartment* will be of value in assessing the degree of risk they pose to the CSF free *compartment*. The design of a monitoring system is dependent on several factors such as the size and distribution of the population, the organisation of the *Veterinary Services* and resources available. The occurrence of CSF in wild and domestic pigs may vary considerably among countries. *Surveillance* design should be epidemiologically based, and the Member should justify its choice of design prevalence and level of confidence based on Chapter 1.4.

The geographic distribution and approximate size of wild pig populations need to be assessed as a prerequisite for designing a monitoring system. Sources of information may include government *wildlife* authorities, *wildlife* conservation organisations, hunter associations and other available sources. The objective of a *surveillance* programme when the *disease* is already known to exist should be to determine the geographic distribution and the extent of the *infection*.

Article 15.2.27.

Recovery of free status: additional surveillance procedures

In addition to the general conditions described in the above-mentioned articles, a Member seeking reestablishment of country or *zone* freedom from CSF should show evidence of an active *surveillance* programme to demonstrate absence of CSFV *infection*.

Populations under this *surveillance* programme should include:

- 1) *establishments* in the proximity of the *outbreak*;
- 2) *establishments* epidemiologically linked to the *outbreak*;
- 3) *animals* used to re-populate affected *establishments* and any *establishments* where contiguous culling is carried out;
- 4) wild pig populations in the area of the *outbreak*.

In all circumstances, a Member seeking reestablishment of country or *zone* freedom from CSF with *vaccination* or without *vaccination* should report the results of an active and a passive *surveillance* programme in which the pig population undergoes regular clinical, pathological, virological, and/or serological examination, planned and implemented according to the general conditions and methods described in these recommendations. The *surveillance* should be based on a statistically representative sample of the populations at risk.

Article 15.2.28.

Surveillance for CSF in wild pigs

- 1) While the same principles apply, *surveillance* in wild pigs presents challenges beyond those encountered in domestic populations in each of the following areas:
 - a) determination of the distribution, size and movement patterns associated with the wild pig population;
 - b) assessment of the possible presence of CSF within the population;
 - c) determination of the practicability of establishing a *zone*.
- 2) The design of a monitoring system for wild pigs is dependent on several factors such as the organisation of the *Veterinary Services* and resources available. The geographic distribution and approximate size of wild pig populations need to be assessed as a prerequisite for designing a monitoring system. Sources of information may include *wildlife* conservation organisations, hunter associations and other available sources. The objective of a *surveillance* programme is to determine if a given *disease* is present, and if so, at what prevalence.

- 3) Estimates of wild pig populations can be made using advanced methods (e.g. radio tracking, linear transect method, capture/recapture) or traditional methods based on the number of *animals* that can be hunted to allow for natural restocking (hunting bags).
 - 4) For implementation of the monitoring programme, it will be necessary to define the limits of the territory over which wild pigs range in order to delineate the *epidemiological units* within the monitoring programme. It is often difficult to define *epidemiological units* for *wild animals*. The most practical approach is based on natural and artificial barriers.
 - 5) The monitoring programme should also include *animals* found dead, road kills, *animals* showing abnormal behaviour or exhibiting gross lesions during dressing.
 - 6) There may be situations where a more targeted *surveillance* programme can provide additional assurance. The criteria to define high risk areas for targeted *surveillance* include:
 - a) areas with past history of CSF;
 - b) sub-regions with large populations of wild pigs;
 - c) border regions with CSF affected countries or *zones*;
 - d) interface between wild and domestic pig populations;
 - e) picnic and camping areas;
 - f) farms with free-ranging pigs;
 - g) garbage dumps;
 - h) other risk areas determined by the *Veterinary Authority*.
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CHAPTER 15.3.

PORCINE BRUCELLOSIS

Article 15.3.1.

General provisions

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

Article 15.3.2.

Herd free from porcine brucellosis

To qualify as free from porcine brucellosis, a *herd* of pigs shall satisfy the following requirements:

- 1) it is under *official veterinary control*;
- 2) it contains no *animal* found to be infected with porcine brucellosis during the past three years; all suspected cases are subjected to *laboratory* investigation;
- 3) all cattle kept in the same *establishment* are officially free or free from brucellosis.

Article 15.3.3.

Recommendations for the importation of pigs for breeding or rearing

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

- 1) showed no clinical sign of porcine brucellosis on the day of shipment;
- 2) were kept in a *herd* free from porcine brucellosis;
- 3) were subjected to a diagnostic test for porcine brucellosis with negative results during the 30 days prior to shipment.

Article 15.3.4.

Recommendations for the importation of pigs for slaughter

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

- 1) were kept in a *herd* free from porcine brucellosis; or
- 2) are not being eliminated as part of an eradication programme against porcine brucellosis.

Article 15.3.5.

Recommendations for the importation of semen of pigs

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

- 1) the donor *animals* showed no clinical sign of porcine brucellosis on the day of collection of the semen;
 - 2) the donor *animals* were kept in a *herd* free from porcine brucellosis;
 - 3) the donor *animals* were subjected to a diagnostic test for porcine brucellosis with negative results during the 30 days prior to collection;
 - 4) the semen does not contain *Brucella* agglutinins;
 - 5) the donor *animals* were kept in the *exporting country*, for the 60 days prior to collection, in an *establishment* or *artificial insemination centre* where the *herd* is free from porcine brucellosis;
 - 6) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.
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CHAPTER 15.4.

SWINE VESICULAR DISEASE

Article 15.4.1.

General provisions

For the purposes of the *Terrestrial Code*, the *incubation period* for swine vesicular disease (SVD) shall be 28 days.

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

Article 15.4.2.

SVD free country

A country may be considered free from SVD when it has been shown that SVD has not been present for at least the past two years.

This period may be nine months for countries in which a *stamping-out policy* is practised.

Article 15.4.3.

SVD infected zone

A *zone* shall be considered as infected with SVD until:

- 1) at least 60 days have elapsed after the confirmation of the last case and the completion of a *stamping-out policy* and *disinfection* procedures, or
- 2) 12 months have elapsed after the clinical recovery or *death* of the last affected *animal* if a *stamping-out policy* was not practised.

Article 15.4.4.

Trade in commodities

Veterinary Authorities of SVD free countries may prohibit importation or transit through their territory, from countries considered infected with SVD, of the following *commodities*:

- 1) domestic and wild pigs;
- 2) semen of pigs;
- 3) *fresh meat* of domestic and wild pigs;
- 4) *meat products* of domestic and wild pigs which have not been processed to ensure the destruction of the SVD virus;
- 5) products of animal origin (from pigs) intended for use in animal feeding or for agricultural or industrial use which have not been processed to ensure the destruction of the SVD virus;
- 6) products of animal origin (from pigs) intended for pharmaceutical or surgical use which have not been processed to ensure the destruction of the SVD virus;
- 7) *pathological material* and biological products (from pigs) which have not been processed to ensure the destruction of the SVD virus.

Article 15.4.5.

Recommendations for importation from SVD free countries

For domestic pigs

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

- 1) showed no clinical sign of SVD on the day of shipment;
- 2) were kept in an SVD free country since birth or for at least the past six weeks.

Article 15.4.6.

Recommendations for importation from SVD free countries

For wild pigs

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

- 1) showed no clinical sign of SVD on the day of shipment;
- 2) come from an SVD free country;

if the country of origin has a common border with a country considered infected with SVD:

- 3) were kept in a *quarantine station* for the six weeks prior to shipment.

Article 15.4.7.

Recommendations for importation from countries considered infected with SVD

For domestic pigs

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

- 1) showed no clinical sign of SVD on the day of shipment;
- 2) were kept since birth, or for the past six weeks, in an *establishment* where no *case* of SVD was officially reported during that period, and that the *establishment* was not situated in an SVD *infected zone*;
- 3) were kept in a *quarantine station* for the 28 days prior to shipment, and were subjected to the virus neutralisation test for SVD with negative results during that period.

Article 15.4.8.

Recommendations for importation from countries considered infected with SVD

For wild pigs

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

- 1) showed no clinical sign of SVD on the day of shipment;
- 2) were kept in a *quarantine station* for the 28 days prior to shipment, and were subjected to the virus neutralisation test for SVD with negative results during that period.

Article 15.4.9.

Recommendations for importation from SVD free countriesFor semen of pigs

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

- 1) the donor *animals*:
 - a) showed no clinical sign of SVD on the day of collection of the semen;
 - b) were kept in an SVD free country for not less than six weeks prior to collection;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 15.4.10.

Recommendations for importation from countries considered infected with SVDFor semen of pigs

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

- 1) the donor *animals*:
 - a) showed no clinical sign of SVD on the day of collection of the semen, and were subjected to the virus neutralisation test for SVD with negative results;
 - b) were kept in the *exporting country* for the 28 days prior to collection, in an *establishment* or *artificial insemination centre* where no case of SVD was officially reported during that period, and that the *establishment* or *artificial insemination centre* was not situated in an SVD *infected zone*;
- 2) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.

Article 15.4.11.

Recommendations for importation from SVD free countriesFor fresh meat of pigs

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

- 1) have been kept in an SVD free country since birth or for at least the past 28 days;
- 2) have been slaughtered in an approved *abattoir*, and have been subjected to ante- and post-mortem inspections for SVD with favourable results.

Article 15.4.12.

Recommendations for importation from countries considered infected with SVDFor fresh meat of pigs

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

- 1) have not been kept in an SVD *infected zone*;
- 2) have been slaughtered in an approved *abattoir* not situated in an SVD *infected zone*, and have been subjected to ante- and post-mortem inspections for SVD with favourable results.

Article 15.4.13.

Recommendations for importation from countries considered infected with SVD

For meat products of pigs

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

- 1) the entire consignment of *meat products* comes from *animals* which have been slaughtered in an approved *abattoir* and have been subjected to ante- and post-mortem inspections for SVD with favourable results;
- 2) the *meat products* have been processed to ensure the destruction of the SVD virus;
- 3) the necessary precautions were taken after processing to avoid contact of the *meat* with any source of SVD virus.

Article 15.4.14.

Recommendations for importation from SVD free countries

For products of animal origin (from pigs) intended for use in animal feeding or for agricultural or industrial use

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products come from *animals* which have been kept in an SVD free country since birth or for at least the past 6 weeks.

Article 15.4.15.

Recommendations for importation from SVD free countries

For products of animal origin (from pigs) intended for pharmaceutical or surgical use

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

- 1) have been kept in an SVD free country since birth or for at least the past six weeks;
- 2) have been slaughtered in an approved *abattoir*, and have been subjected to ante- and post-mortem inspections for SVD with favourable results.

Article 15.4.16.

Recommendations for importation from countries considered infected with SVD

For meal and flour from blood, meat, defatted bones, hooves and claws (from pigs)

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products have been processed to ensure the destruction of the SVD virus.

Article 15.4.17.

Recommendations for importation from countries considered infected with SVD

For bristles (from pigs)

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that these products have been processed to ensure the destruction of the SVD virus, in premises controlled and approved by the *Veterinary Authority* of the *exporting country*.

Article 15.4.18.

Recommendations for importation from countries considered infected with SVDFor fertilisers of animal origin (from pigs)

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

- 1) do not come from an SVD *infected zone*; or
- 2) have been processed to ensure the destruction of the SVD virus.

Article 15.4.19.

Recommendations for importation from countries considered infected with SVDFor products of animal origin (from pigs) intended for pharmaceutical or surgical use

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

- 1) have been processed to ensure the destruction of the SVD virus;
 - 2) come from *animals* which have not been kept in an SVD *infected zone*;
 - 3) come from *animals* which have been slaughtered in an approved *abattoir* and have been subjected to ante- and post-mortem inspections for SVD with favourable results.
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CHAPTER 15.5.

TRANSMISSIBLE GASTROENTERITIS

Article 15.5.1.

General provisions

For the purposes of the *Terrestrial Code*, the *infective period* for transmissible gastroenteritis (TGE) shall be 40 days.

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

Article 15.5.2.

Recommendations for the importation of pigs for breeding or rearing

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

- 1) showed no clinical sign of TGE on the day of shipment;

AND EITHER

- 2) come from an *establishment* in which no *case* of TGE was reported during the 12 months prior to shipment;
and

- 3) showed negative results to a diagnostic test for TGE during the 30 days prior to shipment, and were kept isolated during this period;

OR

- 4) come from a country in which TGE is officially notifiable and no clinical *case* has been recorded in the previous three years.

Article 15.5.3.

Recommendations for the importation of pigs for slaughter

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

- 1) showed no clinical sign of TGE on the day of shipment;
- 2) come from an *establishment* in which no *case* of TGE was officially reported during the 40 days prior to shipment.

Article 15.5.4.

Recommendations for the importation of semen of pigs

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

- 1) the donor *animals* showed no clinical sign of TGE on the day of collection of the semen;

AND EITHER

- 2) the donor *animals* have been resident for at least 40 days on an *artificial insemination centre*, and all the pigs on this *artificial insemination centre* were free from clinical signs of TGE during the 12 months prior to collection;

and

- 3) for fresh semen, the donor *animals* were subjected to a diagnostic test for TGE with negative results during the 30 days prior to collection;
- 4) for frozen semen, the donor *animals* were subjected to a diagnostic test for TGE with negative results at least 14 days after collection;

OR

- 5) the donor *animals* have been resident since birth in a country in which TGE is officially notifiable and no clinical case has been recorded in the previous three years;

and in all situations:

- 6) the semen was collected, processed and stored in conformity with the provisions of Chapters 4.5. and 4.6.
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