

## APPENDIX 3.x.x.

GENERAL GUIDELINES FOR THE APPLICATION OF  
COMPARTMENTALISATION

Article 3.x.x.1

**Introduction and objectives**

The guidelines in this Appendix provide a structured framework for the application and recognition of *compartments* within countries or *zones*, based on the provisions of Chapter 1.3.5. with the objective to facilitate trade in animals and products of animal origin and as a tool for disease management.

Establishing and maintaining a disease-free status for an entire country may be difficult, especially in the case of *diseases* that can easily cross international boundaries. For many *diseases*, OIE Member Countries have traditionally applied the concept of zoning to establish and maintain an animal *subpopulation* with a different animal health status within national boundaries.

Chapter 1.1.1. defines a *compartment* as “one or more *establishments* under a common biosecurity management system containing an animal *subpopulation* 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*.”

The essential difference between zoning and compartmentalisation is that the recognition of *zones* is based on geographical boundaries whereas the recognition of *compartments* is based on management practices and biosecurity. However, spatial considerations and good management practices play a role in the application of both concepts.

Compartmentalisation is not a new concept for *Veterinary Services*; in fact, it has been applied for a long time in many disease control programmes that are based on the concept of disease-free herds/flocks.

The fundamental requirement for compartmentalisation is the implementation of management and biosecurity measures to create a functional separation of *establishments* and allow a clear epidemiological differentiation to be made between *subpopulations* of differing health status.

For example, a confinement operation for poultry or swine in an infected country or *zone* might have biosecurity measures and management practices that result in negligible risk from *diseases* or agents. The concept of a *compartment* extends the application of a ‘risk boundary’ beyond that of a geographical interface and considers all epidemiological factors that can help to create an effective separation between *subpopulations*.

In disease-free countries or zones, *compartments* preferably should be defined prior to the occurrence of a *disease outbreak*. In the event of an *outbreak* or in endemic countries or zones, compartmentalisation may be used to facilitate trade.

For the purpose of *international trade*, *compartments* must be under the direct control and responsibility of the *Veterinary Administration* in the country. For the purposes of this Appendix compliance by the Member Countries with Chapters 1.1.2. and 1.3.3. are an essential prerequisite.

Appendix XXIII (contd)

## Article 3.x.x.2

**Principles for defining a compartment**

A *compartment* may be established with respect of a specific *disease* or *diseases*. A *compartment* must be clearly defined, indicating the location of all its components including *establishments*, as well as related functional units (such as feed mills, *slaughterhouses*, rendering plants etc.), their interrelationships and their contribution to an epidemiological separation between the animals in a *compartment* and *subpopulations* with a different health status. The definition of *compartment* may revolve around *disease* specific epidemiological factors, animal production systems, biosecurity practices and similar functional demarcations.

## Article 3.x.x.3

**Separation of a compartment from potential sources of infection**

The management of a *compartment* must provide to the *Veterinary Administration* documented evidence on the following:

a) Physical or spatial factors that affect the status of biosecurity in a compartment

While a *compartment* is primarily based on biosecurity measures, a review of geographical factors is needed to ensure that the functional boundary provides adequate separation of a *compartment* from adjacent animal populations with a different health status. The following factors should be taken into consideration in conjunction with biosecurity measures and, in some instances, may alter the degree of confidence achieved by general biosecurity and surveillance measures:

- i) *disease* status in adjacent areas and in areas epidemiologically linked to the *compartment*;
- ii) location, *disease* status and biosecurity of the nearest *epidemiological units* or other epidemiologically relevant premises. Consideration should be given to the distance and physical separation from:
  - flocks or herds with a different health status in close proximity to the *compartment*,
  - *slaughterhouses*, rendering plants or feed mills,
  - markets, fairs, agricultural shows, sporting events, zoos, circuses and other points of animal concentration.

b) Infrastructural factors

Structural aspects of the *establishments* within a *compartment* contribute to the effectiveness of its biosecurity. Consideration should be given to:

- i) fencing or other effective means of physical separation;
- ii) facilities for people entry including access control, changing area and showers;
- iii) *vehicle* access including washing and *disinfection* procedures;
- iv) *unloading* and *loading* facilities;
- v) isolation facilities for introduced animals.

- vi) infrastructure to store feed and veterinary products;
- vii) disposal of carcasses, manure and waste;
- viii) water supply.

More detailed recommendations for certain *establishments* can be found in Sections 3.2., 3.3. and 3.4. of the *Terrestrial Code*.

c) Biosecurity plan

The integrity of the *compartment* relies on effective biosecurity. The management of the *compartment* should develop, implement and monitor a comprehensive biosecurity plan.

The biosecurity plan should describe in detail:

- i) potential pathways for introduction and spread into the *compartment* of the agents for which the *compartment* was defined, including animal movements, rodents, fauna, aerosols, arthropods, *vehicles*, people, biological products, equipment, fomites, feed, waterways, drainage or other means. Consideration should also be given to the survivability of the agent in the environment;
- ii) the critical control points for each pathway;
- iii) measures to mitigate exposure for each critical control point;
- iv) standard operating procedures including:
  - implementation, maintenance, monitoring of the measures,
  - application of corrective actions,
  - verification of the process,
  - record keeping;
- v) contingency plan in the event of a change in the level of exposure;
- vi) reporting procedures to the *Veterinary Administration*;
- vii) the programme for educating and training workers to ensure that all persons involved are knowledgeable and informed on biosecurity principles and practices.

In any case, sufficient evidence should be submitted to assess the efficacy of the biosecurity plan in accordance with the level of risk for each identified pathway. The biosecurity risk of all operations of the *compartment* should be regularly re-assessed. Based on the outcome, concrete and documented mitigation steps should be taken to reduce the likelihood of introduction of the disease agent into the *compartment*.

Appendix XXIII (contd)d) Traceability system

A prerequisite for assessing the integrity of a *compartment* is the existence of a valid traceability system. All animals within a *compartment* should be individually identified and registered in such a way that their history can be audited. In cases where individual identification may not be feasible, such as broilers and day-old chicks, the *Veterinary Administration* should provide sufficient assurance of traceability.

All animal movements into and out of the compartment should be certified by the *Veterinary Administration* and recorded at the *compartment* level.

Article 3.x.x.4

**Documentation of factors critical to the definition of a compartment**

Documentation must provide clear evidence that the biosecurity, surveillance, traceability and management practices defined for a *compartment* are effectively applied. In addition to animal movement information, the necessary documentation should include herd or flock production records, feed sources, laboratory tests, birth and death records, the visitor logbook, morbidity history, medication and vaccination records, biosecurity plans, training documentation and any other criteria necessary for the evaluation of disease exclusion.

The historical status of a *compartment* for the *disease(s)* for which it was defined should be documented and demonstrate compliance with the requirements for freedom in the relevant *Terrestrial Code* chapter.

In addition, a *compartment* seeking recognition should submit to the *Veterinary Administration* a baseline animal health report indicating the presence or absence of OIE *listed diseases*. This report should be regularly updated to reflect the current animal health situation of the *compartment*.

Vaccination records including the type of vaccine and frequency of administration must be available to enable interpretation of surveillance data.

The time period for which all records should be kept may vary according to the species and *disease(s)* for which the *compartment* was defined.

All information must be recorded in a transparent manner and be easily accessible so as to be auditable by the *Veterinary Administration*.

Article 3.x.x.5

**Surveillance for the agent or disease**

The surveillance system should comply with Appendix 3.8.1. on General Guidelines for Surveillance and the specific guidelines for surveillance for the *disease(s)* for which the *compartment* was defined, if available.

a) Internal surveillance

Surveillance should involve the collection and analysis of *disease/ infection* data such that the *Veterinary Administration* can certify that the animals in all the *establishments* comply with the defined status of that *compartment*. A surveillance system that is able to ensure early detection in the event that the agent enters an *establishment* is essential. Depending on the *disease(s)* for which the *compartment* was defined, different surveillance strategies may be applied to achieve the desired confidence in disease freedom.

b) External surveillance

The biosecurity measures applied in a *compartment* must be appropriate to the level of exposure of the *compartment*. External surveillance will help identify a significant change in the level of exposure for the identified pathways for *disease* introduction into the *compartment*.

An appropriate combination of active and passive surveillance is necessary to achieve the goals described above. Based on the recommendations of Appendix 3.8.1., targeted surveillance based on an assessment of risk factors may be the most efficient surveillance approach. Targeted surveillance should in particular include epidemiological units in close proximity to the *compartment* or those that have a potential epidemiological link with it.

Article 3.x.x.6

### **Diagnostic capabilities and procedures**

Officially-designated laboratory facilities complying with the OIE standards for quality assurance, as defined in Chapter I.1.2. of the *Terrestrial Manual*, should be available for sample testing. All laboratory tests and procedures should comply with the recommendations of the *Terrestrial Manual* for the specific *disease*. Each laboratory that conducts testing should have systematic procedures in place for rapid reporting of disease results to the *Veterinary Administration*. Where appropriate, results should be confirmed by an OIE Reference Laboratory.

Article 3.x.x.7

### **Emergency response and notification**

Early detection, diagnosis and notification of *disease* are critical to minimise the consequences of *outbreaks*.

In case of a suspicion or occurrence of any OIE *listed disease* not present according to the baseline animal health report of the *compartment* referred to in Article 3.x.x.4., the management of the *compartment* should notify the *Veterinary Administration*, as this may indicate a breach in the biosecurity measures. The *Veterinary Administration* should immediately suspend export certification and should notify the *importing countries*. Trade may only be resumed after the *compartment* has adopted the necessary measures to re-establish the biosecurity level and the *Veterinary Administration* re-approves the *compartment* for trade.

Positive findings of the *disease(s)* for which the *compartment* has been defined, should be immediately notified following the provisions of Chapter 1.1.2.

Article 3.x.x.8

### **Supervision and control of a compartment**

The authority, organisation, and infrastructure of the *Veterinary Services*, including laboratories, must be clearly documented in accordance with the chapter on the evaluation of Veterinary Services of the *Terrestrial Code*, to provide confidence in the integrity of the *compartment*.

The *Veterinary Administration* has the final authority in granting, suspending and revoking the status of a *compartment*. The *Veterinary Administration* should continuously supervise compliance with all the requirements critical to the maintenance of the *compartment* status described in this Appendix and ensure that all the information is readily accessible to the *importing countries*.



## DRAFT GUIDELINES ON THE DESIGN AND IMPLEMENTATION OF IDENTIFICATION SYSTEMS TO ACHIEVE ANIMAL TRACEABILITY

### INTRODUCTION AND OBJECTIVES

These guidelines are based on the general principles presented in Article 3.5.1.1. The Guidelines outline for Member Countries the basic elements that need to be taken into account in the design and implementation of an *animal identification system* to achieve *animal traceability*. Whatever *animal identification system* the country adopts, it should comply with relevant OIE standards. Each country should design a program in accordance with the scope and relevant performance criteria to ensure that the desired *animal traceability* outcomes can be achieved.

### DEFINITIONS

These following definitions apply for the purpose of this Appendix.

**Desired outcomes:** describe the overall goals of a programme and are usually expressed in qualitative terms, e.g. 'to ensure that animals and/or animal products are safe and suitable for use'. Safety and suitability for use could be defined in terms such as animal health, food safety, trade.

**Performance criteria:** are specifications for performance of a programme and are usually expressed in quantitative terms, such as 'all animals can be traced to the *establishment* of birth within 48 hours of an enquiry'.

**Reporting** means advising the *Veterinary Administration* in accordance with the procedures listed in the programme.

**Scope** specifies the targeted species, population and/or production/trade sector within a defined area (country, zone) or compartment that is the subject of the identification and traceability programme.

**Transhumance** periodic/seasonal movements of *animals* between different pastures or premises within or between countries.

### KEY ELEMENTS OF THE ANIMAL IDENTIFICATION SYSTEM

#### 1. Desired outcomes

Desired outcomes should be defined through consultation between the *Veterinary Administration* and other parties, which should include (depending on scope) animal producers and food processors, private sector veterinarians, scientific research organisations and other government agencies. Desired outcomes may be defined in terms of any or all of the following:

- a) animal health (e.g. disease surveillance and notification; detection and control of disease; vaccination programmes);
- b) public health (e.g. surveillance and control of zoonotic diseases and food safety);
- c) management of emergencies e.g. natural catastrophies or man-made events;
- d) trade (support for inspection and certification activities of Veterinary Services).

Appendix XXXIV (contd)2. Scope

Scope should also be defined through consultation between the *Veterinary Administration* and other parties, as discussed above. The scope of *animal identification systems* is often based on the definition of a species and sector, to take account of particular characteristics of the farming systems e.g. pigs in pork export production; cattle within a defined FMD-free zone. Different systems will be appropriate according to the production systems used in countries and the nature of their industries and trade.

3. Performance criteria

Performance criteria are also designed in consultation with other parties, as discussed above. The performance criteria depend on the desired outcomes and scope of the program. They are usually described in quantitative terms. For example, some countries consider it necessary to trace susceptible animals within 24-48 hours when dealing with highly contagious diseases such as FMD and avian influenza. For food safety, animal tracing to support investigation of incidents may also be urgent. For chronic animal diseases, such as bovine paratuberculosis it may be considered appropriate that animals can be traced within 30 days.

4. Preliminary studies

In designing *animal identification systems* it is useful to conduct preliminary studies, which should take into account:

- a) Animal populations, species, distribution, herd management;
- b) Farming and industry structures, production and location;
- c) Animal health;
- d) Public health;
- e) Trade issues;
- f) Zoning and compartmentalisation;
- g) Animal movement patterns (including transhumance);
- h) Information management and communication;
- i) Availability of resources (human and financial);
- j) Social and cultural aspects;
- k) Stakeholder knowledge of the issues and expectations;
- l) Gaps between current enabling legislation and what is needed long term;
- m) International experience;
- n) National experience;
- o) Available technology options.



Pilot projects may form part of the preliminary study to test the *animal identification system* and *animal traceability* and to gather information for the design and the implementation of the programme

Economic analysis may consider costs, benefits, funding mechanisms and sustainability.

## 5. Design of the programme

### a) General provisions

The programme should be designed in consultation with the stakeholders to facilitate the implementation of the *animal identification system* and *animal traceability*. It should take into account the scope, performance criteria and desired outcomes as well as the results of any preliminary study.

All the specified documentation should be standardised as to format, content and context.

To protect and enhance the integrity of the system, procedures should be incorporated into the design of the programme to prevent, detect and correct errors e.g. use of algorithms to prevent duplication of identification numbers in an electronic database.

### b) Means of animal identification

The choice of a physical animal identifier should take into account elements such as the durability, human resources, species and age of the animals to be identified, required period of identification, cultural aspects, technology compatibility and relevant standards, farming practices, animal population, climatic conditions, resistance to tampering, trade considerations, cost, and retention and readability of the identification method.

The *Veterinary Administration* is responsible for approving the materials and equipment chosen, to ensure that these means of animal identification comply with technical and field performance specifications, and for the supervision of their distribution. The *Veterinary Administration* is also responsible for ensuring that identifiers are unique and are used in accordance with the requirements of the *animal identification system*.

The *Veterinary Administration* should establish procedures for *animal identification* and *animal traceability* including:

- i) The time period within which an animal born on an *establishment* should be identified.
- ii) Animals imported into an *establishment*.
- iii) When an animal loses its identification or the identifier becomes unusable.
- iv) Arrangements for the destruction and/or reuse of identifiers.

Where group identification without a physical identifier is adequate, documentation should be created specifying at least the number of animals in the group, the species, the date of identification, the person legally responsible for the animals and/or establishment. This documentation constitutes a unique group identifier.

Where all animals in the group are physically identified with a group identifier, documentation should also specify the unique group identifier.

Appendix XXXIV (contd)

## c) Registration

Procedures need to be incorporated into the design of the programme in order to ensure that relevant events and information are registered in a timely and accurate manner.

Depending on the scope, performance criteria and desired outcomes, records as described below should specify, at least, the species, the unique animal or group identifier, the date of the event, the identifier of the *establishment* where the event took place, and the code for the event itself.

## i) Establishments/owners

*Establishments* where animals are kept should be identified and registered, including at least their physical location (such as geographical coordinates or street address), the type of *establishment* and the species kept. The register should include the name of the person legally responsible for the animals at the *establishment*.

The types of establishments that may need to be registered include holdings (farms), assembly centres (e.g. agriculture shows and fairs, sporting events, transit centres, breeding centres), *markets*, *abattoirs*, rendering plants, dead stock collection points, transhumance areas, centres for necropsy and diagnosis, research centres, zoos, *border posts*, *quarantine stations*.

In cases where the registration of establishments is not applicable e.g. some transhumance systems, the animal owner, the owner's place of residence and the species kept should be recorded.

## ii) Animals

*Animal identification* and species should be registered for each *establishment/owner*. Other relevant information about the animals at each establishment/owner may also be recorded e.g. date of birth, production category, sex, breed, *animal identification* of the parents.

## iii) Movements

The *registration* of animal movements is necessary to achieve *animal traceability*. When an animal is introduced into or leaves an *establishment*, these events constitute a movement.

Some countries classify birth, *slaughter* and *death* of the animal as movements.

The information registered should include the date of the movement, the *establishment* from which the animal or group of animals was dispatched, the number of animals moved, the destination *establishment*, and any in transit *establishment*.

When *establishments* are not registered as part of the *animal identification system*, ownership and location changes constitute a movement record. Movement recording may also include means of *transport* and the *vehicle* identifier.

Procedures should be in place to maintain *animal traceability* during *transport* and when animals arrive and leave an *establishment*.

## iv) Events other than movements

The following events may also be *registered*:

- birth, *slaughter* and *death* of the animal (when not classified as a movement)
- attachment of the unique identifier to an animal
- change of ownership regardless of change of *establishment*
- observation of an animal on an *establishment* (testing, health investigation, health certification, etc.)
- animal imported: a record of the *animal identification* from the exporting country should be kept and linked with the *animal identification* assigned in the importing country
- animal exported: a record of the *animal identification* from the exporting country should be provided to the Veterinary Administration in the importing country
- animal identifier lost or replaced
- animal missing (lost, stolen, etc.)
- animal identifier retired (at slaughter, following loss of the identifier or death of the animal on a farm, at diagnostic laboratories, etc.).

d) Documentation

Documentation requirements should be clearly defined and standardised, according to the scope, performance criteria and desired outcomes and supported by the legal framework.

e) Reporting

Depending on the scope, performance criteria and desired outcomes, relevant information (such as *animal identification*, movement, events, changes in numbers of livestock, *establishments*) should be reported to the *Veterinary Administration* by the person responsible for the animals.

f) Information system

An information system should be designed according to the scope, performance criteria and desired outcomes. This may be paper based or electronic. The system should provide for the collection, compilation, storage and retrieval of information on matters relevant to *registration*. The following considerations are important:

- Have the potential for linkage to traceability in the other parts of the food chain
- Minimise duplication
- Relevant components, including databases, should be compatible
- Confidentiality of data.

The *Veterinary Administration* should have access to this information system as appropriate to meet the scope, performance criteria and desired outcomes.

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## g) Laboratories

The results of diagnostic tests should record the animal identifier or the group identifier and the *establishment* where the sample was collected.

## h) Abattoirs, rendering plants, dead stock collection points, markets, assembly centres

*Abattoirs*, rendering plants, dead stock collection points, *markets* and assembly centres should document arrangements for the maintenance of *animal identification* and *animal traceability* in compliance with the legal framework.

These *establishments* are critical points for control of animal health and food safety.

*Animal identification* should be recorded on documents accompanying samples collected for analysis.

The components of the *animal identification system* operating within *abattoirs* should complement and be compatible with arrangements for tracking animal products throughout the food chain. At an *abattoir*, *animal identification* should be maintained during the processing of the animal's carcass until the carcass is deemed fit for human consumption.

The *animal identification* and the *establishment* from which the animal was dispatched should be registered by the *abattoir*, rendering plant and dead stock collection points.

*Abattoirs*, rendering plants and dead stock collection points should ensure that identifiers are collected and disposed of according to the procedures established and regulated within the legal framework. These procedures should minimize the risk of unauthorized reuse and, if appropriate, should establish arrangements for the reuse of identifiers.

Reporting of movement by *abattoirs*, rendering plants and dead stock collection points should occur according to the scope, performance criteria and desired outcomes and the legal framework.

## i) Penalties

Different levels and types of penalties should be defined in the programme and supported by the legal framework

6. Legal framework

The *Veterinary Administration*, with other relevant governmental agencies and in consultation with stakeholders, should establish a legal framework for the implementation and enforcement of *animal identification system* and *animal traceability* in the country. The structure of this framework will vary from country to country.

*Animal identification*, *animal traceability* and animal movement should be under the responsibility of the *Veterinary Administration*.

This legal framework should address:

- i) desired outcomes and scope;
- ii) obligations of the *Veterinary Administration* and other parties;

- iii) organisational arrangements, including the choice of technologies and methods used for the *animal identification system* and *animal traceability*;
- iv) management of animal movement;
- v) confidentiality of data;
- vi) data access / accessibility;
- vii) checking, verification, inspection and penalties;
- viii) where relevant, funding mechanisms;
- ix) where relevant, arrangements to support a pilot project.

## 7. Implementation

### a) Action plan

For implementing the *animal identification system*, an action plan should be prepared specifying the timetable and including the milestones and performance indicators, the human and financial resources, and checking, enforcement and verification arrangements.

The following activities should be addressed in the action plan:

#### i) Communication

The scope, performance criteria, desired outcomes, responsibilities, movement and registration requirements and sanctions need to be communicated to all parties. Communication strategies need to be targeted to the audience, taking into account elements such as the level of literacy (including technology literacy) and spoken languages.

#### ii) Training programmes

It is desirable to implement training programmes to assist the *Veterinary Services* and other parties.

#### iii) Technical support

Technical support should be provided to address practical problems.

### b) Checking and Verification

Checking activities should start at the beginning of the implementation to detect, prevent and correct errors and to provide feedback on programme design.

Verification should begin after a preliminary period as determined by the *Veterinary Administration* in order to determine compliance with the legal framework and operational requirements.

### c) Auditing

Auditing should be carried out under the authority of the *Veterinary Administration* to detect any problems with the *animal identification system* and *animal traceability* and to identify *possible* improvements.

Appendix XXXIV (contd)

d) Review

The programme should be subject to periodic review, taking into account the results of *checking*, verification and auditing activities.

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## Draft guidelines on dog population control

### Preamble

Stray and feral dogs pose serious human health, socio-economic, political and animal welfare problems in many countries of the world. Many of these are developing countries and others fall in the least developed category. Whilst acknowledging human health is a priority including the prevention of zoonotic diseases notably rabies, the OIE recognises the importance of controlling dog population without causing unnecessary or avoidable animal suffering. Veterinary Services should play a lead role in preventing zoonotic diseases and ensuring animal welfare and should be involved in dog population control.

### Guiding principles

The following guidelines are based on those laid down in Section 3.7 of the Terrestrial Animal Health Code. Some additional principles are relevant to these guidelines:

- The promotion of responsible dog ownership can significantly reduce the numbers of stray dogs and the incidence of zoonotic diseases
- Because dog ecology is linked with human activities, management of dog populations has to be accompanied by changes in human behaviour to be effective.

### Article 1

#### Definitions

- a) **Stray Dog:** dog not under direct control or not prevented from roaming

Types of stray dog

- free roaming owned dog not under direct control or restriction at a particular time
  - free roaming dog with no owner
  - feral dog: domestic dog reverted to the wild state and no longer directly dependant upon humans for successful reproduction.
- b) **Owned Dog:** Means dog with a person that is responsible for this animal.
- c) **Person:** This can include more than one individual, and could comprise family/household members or an organisation .
- d) **Responsible Ownership:** The situation whereby a person(as defined above) accepts and commits to perform various duties focused on the satisfaction of the psychological, environmental and physical needs of a dog (or other pet) and to the prevention of risks (aggression, disease transmission or causing injuries) that the pet may cause to the community or the environment
- e) **Euthanasia:** The act of inducing death in a humane manner.
- f) **Competent Authority:** Means the *Veterinary Services*, or other Authority of a Member Country, having the **responsibility** and competence and for ensuring or supervising the implementation of animal health measures or other standards in the *Terrestrial Code*.

Appendix XXXV (contd)

- g) Dog Population Control Programme:** A programme with the objective of reducing the number of stray dogs.
- h) Carrying capacity:** Is the upper limit of the dog population density that could be supported by the habitat based on the availability of resources (food, water, shelter), and human acceptance.

**Article 2****Dog population control program optional objectives**

The objectives of a program to control dog population may include the following:

1. improve health and welfare of owned and stray dog population;
2. reduce numbers of stray dogs;
3. create a rabies immune dog population;
4. promote responsible ownership;
5. reduce the risk of zoonotic diseases other than rabies;
6. manage other risks to human health;
7. prevent harm to the environment.

**Article 3****Responsibilities and competencies**a) Veterinary Administration

The Veterinary Administration is responsible for the implementation of animal health legislation and for controlling outbreaks of notifiable animal diseases such as foot and mouth disease and avian influenza. Control of endemic zoonotic diseases such as rabies and parasitic infections (eg *Echinococcus*) would require technical advice from the Veterinary Administration, as animal health and some aspects of public health are within this Administration's competence but organising and/or supervising dog control schemes is frequently the responsibility of government agencies other than the Veterinary Administration.

In many countries the Veterinary Administration is in the Ministry of Agriculture.

b) Other Government Agencies

The responsibilities of other government agencies will depend on the disease and the objective/nature of the dog population control measures employed.

The Ministry or other Agency responsible for Public Health would normally play a leadership role and may have legislative authority in dealing with zoonotic diseases. Control of stray dogs in regards to other human health risks (eg stray dogs on roads; dog attacks within communities) may fall within the responsibility of the Public Health Agency but is more likely to be the responsibility of police or other agencies for public safety/security operating at State/Provincial or municipal level.



Environment Protection Agencies (normally within National or State/Provincial Ministry for the Environment) may take responsibility for the controlling problems associated with stray dogs when they present a hazard to the environment (eg control of feral dogs in national parks; prevention of dog attacks on wildlife) or where a lack of environmental controls is giving rise to stray dog populations that threaten human health or access to amenities. For example, Environmental Protection agencies may regulate and enforce measures to prevent dogs (and other wild animals) accessing waste or human sewage.

c) Private Sector Veterinarians

The private sector veterinarian is responsible for providing advice to pet owners consulting the veterinarian for advice or treatment of a dog. The private sector veterinarian can play an important role in disease surveillance as he/she might be the first to see a dog suffering from a notifiable disease such as rabies. It is necessary that the private sector veterinarian follow the procedure established by the Veterinary Administration for responding to and reporting a suspected rabies case or a dog that is suffering from any other notifiable disease. Private sector veterinarians also play an important role (often in liaison with the police) in dealing with cases of neglect that can lead to problems with stray and mismanaged dogs.

The private veterinarian has competence and will normally be involved in pet dog health programmes and population control measures, including health testing and vaccination, kennelling during the absence of the owner, sterilisation and euthanasia. Two-way communication between the private sector veterinarian and Veterinary Administration, often via the medium of a veterinary professional organisation, is very important and the Veterinary Administration is responsible to set up appropriate mechanisms for this.

d) Non Governmental Organisations (NGOs)

NGOs are potentially an important partner of the Veterinary Services in contributing to public awareness and understanding and helping to obtain resources to contribute in a practical way to the design and successful implementation of dog control programmes. NGOs can supply local knowledge on dog populations and features of ownership, as well as expertise in handling and kennelling dogs and the implementation of large scale vaccination and sterilisation programmes. NGOs can also contribute, together with veterinarians and the authorities in educating the public in responsible dog ownership. NGOs can help to obtain funding for control programmes, particularly in countries where governments may depend on support from NGOs for programs carried out to assist poor communities.

e) Local Government Authorities

Local Government Authorities are responsible for many services and programmes that relate to health, safety and public good within their jurisdiction. In many countries the legislative framework gives authority to local government agencies in regard to aspects of public health, environmental health/hygiene and inspection/compliance activities.

In many countries local government agencies are responsible for the control of stray dogs (eg dog catching and shelters) and the alleviation of the problems stray dogs cause. This would normally be done with advice from a higher level (national or state/provincial) authority with specialised expertise in regard to public health and animal health. Collaboration with the private sector veterinarians (eg in programs to sterilise and vaccinate stray dogs) is a common feature of dog control programs. Regardless of the legislative basis, it is essential to have the co-operation of local government authorities in the control of stray dogs.

## Article 4

**Considerations in planning dog population control programme measures**

In the development of dog population control programs it is recommended that the authorities establish an advisory group which would include appropriate veterinarians, experts, and stakeholders. The main purpose of this advisory group would be to analyse the problem, identify the causes and propose the most effective approaches to use in the short and long term.

## Important considerations

## a) Identifying the sources of stray dogs

- Owned animals that roam freely
- Animals that have been abandoned by their owner, including animals resulting from:
  - Uncontrolled breeding of owned dogs
  - Unowned dogs that reproduce successfully.

b) Estimating the existing number, distribution and ecology **(To be completed)**

Using available practical tools such as registers of dogs, population estimates, surveys of dogs, owners, dog shelters and associated veterinarians etc. A methodology must be established in order to make an estimate of the total dog population. The same methodology must be used at appropriate intervals to assess population trends. Find references if possible:

- Identify the important factors relevant to dog carrying capacity of the environment. These generally include food, shelter, water, human behaviour
- Add examples of good methodology if possible.

## c) Legislation

Legislation that would help authorities to establishing successful dog control programmes should include the following key elements:

- Registration and identification of dogs and licensing of owners
- Rabies vaccination
- Veterinary procedures (e.g. surgical procedures)
- Control of dog movement (restrictions within the country)
- Control of dog movement (international movement)
- Control of dangerous dogs
- Commercial dog production

- Environmental controls (e.g. abattoirs, rubbish dumps, dead stock facilities)
  - Dog shelters
  - Animal welfare, including humane capture and killing methods.
- d) Resources available to authorities
- Human resources
  - Financial resources
  - Technical tools
  - Infrastructure
  - Cooperative activities (D. Wilkins)
  - Public-private-NGO
  - Central-state or province-local.

#### Article 5

#### **Control measures**

The following control measures should be implemented according to the situation in Member Countries. They can be used in combination or singly.

a) Education and promotion of responsible ownership **(To be completed)**

The health and welfare of domestic dogs may be improved through the promotion of responsible human ownership. Minimizing stray dogs population, in combination with educating humans, particularly children about specific behaviours, can reduce dog bite injury and prevent some major zoonotic diseases.

Responsible dog ownership includes the control of reproduction of dogs under direct human supervision such that offspring of owned dogs are not abandoned.

b) Registration and identification (licensing)

A core component of dog population management by Competent Authorities is the registration and identification of owned dogs and granting licences to owners. This may be emphasized as part of responsible dog ownership and is often linked to animal health programs, for example, mandatory rabies vaccination.

Registration and identification of animals may be used as a tool to encourage dog reproduction control of owned dogs through a reduced fee schedule to register neutered dogs.

Appendix XXXV (contd)c) Reproductive control

Controlling reproduction in dogs prevents the birth of unwanted litters of puppies and can help address the balance between demand for dogs and the size of the population. It is advisable to focus efforts to control reproduction on those individuals or groups in the dog population identified as the most productive and the most likely to be the sources of unwanted and stray dogs, as this will ensure best use of resources. Methods of controlling reproduction will require direct veterinary input to individual animals, involvement of both private and public veterinary sectors may be required to meet demand. The control of reproduction is essentially the responsibility of owners and can be incorporated into education on responsible ownership (section 5 a.). Methods for controlling reproduction in dogs include:

- i) Surgical sterilisation
- ii) Chemical sterilisation
- iii) Chemical contraception
- iv) Separation of female dogs during oestrus from entire males.

Any chemicals or drugs used in controlling reproduction should be shown to have appropriate safety, quality and efficacy for the function required and used according to the manufacturers and Competent Authorities regulations. In the case of chemical sterilants and contraceptives, this may require further research and trials to be completed before use.

d) Removal and handling

The *Competent Authority* should collect dogs that are not under direct supervision and verify their ownership. Capture, transport, and holding of the animals should be done humanely. The *Competent Authority* should develop and implement appropriate legislation to regulate these activities.

e) Management of dogs removed from communities

- Competent authorities have the responsibility to develop minimum standards for the housing (physical facilities) and care of these dogs. There should be a provision for holding the dogs for a reasonable period of time to allow for reunion with the owner and, as appropriate, for rabies observation. A period of 7 -10 days is often used for this purpose.
- Dogs that are removed from a community may be reunited with the owner or offered to new owners for adoption. This provides an opportunity to promote responsible ownership including animal health care through vaccination against common diseases of dogs, control of ecto- and endo-parasites, and vaccination against major zoonotic diseases such as rabies. Incentives for dog reproduction control may be provided through the provision of neutering services at a reduced rate or the release for adoption of only neutered animals. The effectiveness of this strategy ie. offering dogs to new owners may be limited due to the suitability and number of dogs.
- Dogs that are removed from a community may in some cases be provided health care (rabies vaccination), neutered, and released to their local community at or near the place of capture. The beneficial effect of this practice for dog welfare and population management is unknown. With regard to disease control, such as for rabies and possibly others, some beneficial effect may be realized. This may be short or long time.

- Dogs that are removed from a community may, in some cases, be too numerous to place responsible ownership. If elimination of the excess animals is the only option, killing should be under regulation by a Competent Authority and conducted humanely.
- A number of selected animals, could be released if “*environmentally compatible*”, meaning that, once again, the feasibility of this strategy is very much related to the local people attitude/resources availability:
  - Risk-benefit evaluation of Catch Neuter Release & Monitoring (CNR&M) in terms of public safety and AW
  - Proper behavioural evaluation of dogs when removed for problems related to public nuisance
  - Monitoring needed to evaluate individual health and welfare
  - Sufficient level of public tolerance, food and assistance provided by responsible people/community
  - Permanent identification (i.e. surgical sterilization, rabies vaccination, echinococcosis treatment, Leishmaniasis negative test). These actions clearly recon duct the animal to an “owner”, both intended as public (local municipality, regional government) or private
  - Possibly clearly visible at distance (i.e. painted collars).

**Advantages:** Possible strategy in an early stage, when scarce resources are in place, if adopted in very specific situation it may also promote the societal value of animals and the benefits of a positive human-animal relationship (Rome’s cat colony, “community” dogs).

**Disadvantages/** Ineffective over a long term since not promoting responsible ownership concept, possible AW concerns due to persistent intolerance by the community, possible risk to human safety and damage of the private property due to improper selection of animals.

Preferably to be used as a “spot” solution in specific situations and only in addition to other measures (humane education, door-to-door reuniting programs, adoption programs), possibly not to be used as the sole method of stray dog population control as a long term strategy.

f) Environmental controls

Steps should be taken to reduce the carrying capacity, excluding dogs from sources of food (e.g. rubbish dumps and abattoirs, and installing animal-proof rubbish containers).

This should be linked to a reduction in the animal population by other methods, to avoid animal welfare problems.

g) Control of dog movement – international (export/import)

Chapter 2.2.5 of the Terrestrial Animal Health Code provides recommendations on the international movement of dogs between rabies free countries and countries considered to be infected with rabies.

h) Control of dog movements – within country (e.g. leash laws, roaming restrictions)

Measures for the control of dog movement in a country are generally invoked for two reasons:

Appendix XXXV (contd)

- for rabies control when the disease is present in a country
- for public safety reasons
- for the safety of “owned dogs” in an area or locality when a stray dog control program is in place.

In both cases is essential that dogs are registered and permanently identified to control or confine these dogs, reunite them if collected and to keep the relevant sanitary information recorded.

Legislation to give the necessary power is necessary and a national or local infrastructure of organization, administration, staff and resources is essential to encourage the finders of a stray dog to report to the competent authority.

The following 3 grades of movement control can be applied:

- Absolute control (confinement, leash and muzzle), feasible during a limited periods for emergency
- Partial control (obedience if not on leash during daylight, confinement between the relevant information 5pm and 8 am)
- Control during specific times (rabies vaccination campaign, stray dog roundup).

i) Regulation of Commercial Animal Dealers

While the majority of animal breeders and dealers are committed to raising and selling physically and psychologically healthy pets, regulation is necessary to ensure that all of these operations provide adequate care.

The law should require the humane care and treatment of certain animals sold as pets in retail stores as well at the wholesale level, transported in commerce, and used in research or exhibits.

Individuals using or working with such animals should be licensed and they must comply with regulations and standards.

- Standards of Care and Recordkeeping

Businesses in the commercial pet trade must maintain minimum standards for veterinary care and animal management. The requirements should cover housing, handling, sanitation, food, water, and protection against extremes of weather and temperature.

To prevent lost or stolen animals from entering trade channels, breeders and dealers are required to keep records that identify the source and disposition of all regulated animals that come into their possession.

- Shipping and Handling

Specific regulations and standards are needed to regulate the transport of animals by commercial carriers. These rules help ensure that licensed dealers, contract carriers, and intermediate handlers treat regulated animals humanely. Transported animals must meet established minimum age and health certification requirements.

j) Reduction in dog bite incidence

Propensity to bite is influenced by heredity, early experience, socialisation & training, health and human behaviour towards the dog. Breed or type specific bans are difficult and costly to enforce, provide a false sense of security to the community and, where enacted, no data currently supports them as effective in reducing incidence of dog bites; therefore, they are not recommended. Specific behaviours or incidences can be used as criteria to facilitate identification of a dog as 'dangerous' and appropriate measures taken to control the animal by the competent authority. For example, a dog that has been reported to have bitten someone or something (livestock or pets) may be required by law to be confined on the owner's property and kept on a lead (and if necessary muzzled) when in public. Note that confinement by tethering should be avoided as this can increase the likelihood of aggressive behaviour.

The most effective means of reducing prevalence of dog bites are education and placing responsibility on the owner, not the animal. Dog owners should be trained in principles of responsible pet ownership as described in Article 5.a. Legal mechanisms that enable the competent authorities to impose penalties or otherwise deal with irresponsible owners are necessary. Mandatory registration and identification schemes will facilitate the effective application of such mechanisms. Young children are the most at-risk group for dog bites. Education programmes focussed on appropriate dog-directed behaviour have been demonstrated to be effective in reducing dog bite prevalence and these programmes should be encouraged.

k) Euthanasia

When euthanasia is practised, the procedures used should comply with the presented laid down in the Terrestrial Animal Health Code – 2006 (Article 3.7.6.1).

For reasons of convenience, different procedures could be used in rural and in urban areas. Dogs should only be euthanized after holding for a period of time to allow for the owner to locate his/her dog.

Several euthanasia procedures are available. They fall into two major categories based on whether it is necessary to handle or restrain the dog or not in order to euthanize it.

Where capture or restraint procedures give rise to a risk or potential risk of human exposure to rabies, procedures that do not require restraint of dogs are preferable.

The methods are not described in any particular order.

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	Procedure	Capture	Restraint = Handling	Advantages/Disadvantages
Urban area	Electrocution	Yes	No	Affordable equipment: 220 V mains current; gloves + boots. Instant death.
	Carbon monoxide (CO)	Yes	No	Needs appropriate premises; puts personnel at risk. Slow death.
	CO <sub>2</sub>	Yes	No	As CO <sub>2</sub> is heavier than air, the dogs can lift their heads over the CO <sub>2</sub> layer and death is slow.
	Barbiturates	Yes	Yes	Requires an appropriate dose and pre-anaesthetic. Administered under veterinary supervision and requires trained personnel. Slow death.
	Intravenous	Yes	Yes	
	Intracardial	Yes	Yes	
T 61 = Tanax	Yes	Yes	Dangerous for personnel in the event of accidental injection. Slow death.	
Intravenous	Yes	Yes		
Intracardial	Yes	Yes		
Intrapulmonary	Yes	Yes		
Rural area	Free bullet used from long range	No	No	Fast death. Risk of accident (same as for hunting)

**To be developed for each method**

1. Introduction
2. Requirements for effective use
3. Advantages
4. Disadvantages
5. Conclusions

## Article 6

**Monitoring and Evaluation****To be completed**

## Article 7

**Research needs****To be completed**

## Article 8

**International cooperation****To be completed**



## CHAPTER 2.5.14.

**AFRICAN HORSE SICKNESS**

## Article 2.5.14.1.

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* neighbouring, or considered at risk from, 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 Appendix 3.8.X.

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

## Article 2.5.14.2.

**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 equidae, their semen, oocytes or embryos, and *pathological material* and biological products from these species are carried out in accordance with this chapter, and either:
  - a) *historical freedom* as described in Appendix 3.8.1. 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 2 years and is not adjacent to a country or *zone* not having a free status; or
  - c) a surveillance programme has demonstrated no evidence of AHSV in the country or *zone* for at least 12 months ; or
  - d) the country or *zone* has not reported any case of AHS and a surveillance programme has demonstrated no evidence of *Culicoides* likely to be competent AHSV vectors in the country or *zone*.
2. An AHSV free country or *zone* will not lose its free status through the importation of vaccinated or seropositive equidae, their semen, oocytes or embryos from infected countries or *zones*, provided these imports are carried out in accordance with this Chapter.

## Article 2.5.14.3.

**AHSV seasonally free zone**

1. An AHSV seasonally free *zone* is a part of an infected country or *zone* for which for part of a year, ongoing surveillance and *monitoring* demonstrate no evidence of AHSV transmission and of the presence of adult *Culicoides* likely to be competent AHSV vectors.

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2. For the application of Articles 2.5.14.6., 2.5.14.8. and 2.5.14.9., 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* likely to be competent AHSV vectors as demonstrated by an ongoing surveillance programme, and
  - b) taken to conclude either:
    - i) at least 28 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* likely to be competent AHSV vectors.
3. An AHSV seasonally free *zone* will not lose its free status through the importation of vaccinated or seropositive equidae, their semen, oocytes or embryos from infected countries or *zones*, provided these imports are carried out in accordance with this chapter.

Article 2.5.14.4.

**AHSV infected country or zone**

An AHSV infected country or *zone* is a clearly defined area where the conditions of Article 2.5.14.2. or Article 2.5.14.3. do not apply.

Article 2.5.14.5.

When importing from AHSV free countries not neighbouring or considered at risk from an AHSV infected country or *zone*, *Veterinary Administrations* should require:

for equidae

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 since birth or for at least 40 days prior to shipment;
4. either:
  - a) did not transit through an infected country or *zone*, or
  - b) were protected from attack from *Culicoides* likely to be competent AHSV vectors at all times when transiting through an infected country or *zone*.

Article 2.5.14.6.

When importing from AHSV free countries, free *zones*, or seasonally free zones during the seasonally free period, neighbouring or considered at risk from, an AHSV infected country or *zone*, *Veterinary Administrations* should require:

for equidae

the presentation of an *international veterinary certificate* attesting that the animals:

1. showed no clinical signs 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, free zone or seasonally free zone during the seasonally free period since birth or for at least 40 days prior to shipment;
4. were held in quarantine and protected at all times from attack from *Culicoides* likely to be competent AHSV vectors; and
  - a) 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 *quarantine station*; or
  - b) serological tests according to the *Terrestrial Manual* to detect serotype specific antibodies to the AHSV serotypes known to occur within the region 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 *quarantine station*; or
  - c) agent identification tests according to the *Terrestrial Manual* were carried out with negative results on blood samples collected on two occasions with an interval of not less than 14 days between collection, the first sample being collected at least 7 days after introduction into the *quarantine station*;
5. were protected from attack from *Culicoides* likely to be competent AHSV vectors during transportation to and at the *place of shipment*.

Article 2.5.14.7.

When importing from an AHSV infected country or zones, *Veterinary Administrations* should require:

for equidae

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 continuously during the quarantine period in a vector proof *quarantine station* and protected at all times from attack from *Culicoides* likely to be competent AHSV vectors; and
  - a) a serological test according to the *Terrestrial Manual* to detect antibodies to the AHSV group, was carried out with negative result on a blood sample collected at least 28 days after introduction into the *quarantine station*; or

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- b) serological tests according to the *Terrestrial Manual* to detect serotype specific antibodies to the AHSV serotypes known to occur within the region 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 *quarantine station*; or
  - c) agent identification tests according to the *Terrestrial Manual* were carried out with negative results on blood samples collected on two occasions with an interval of not less than 14 days between collection, the first sample being collected at least 7 days after introduction into the *quarantine station*;
4. were protected from attack from *Culicoides* likely to be competent AHSV vectors during transportation to and at the *place of shipment*.

Article 2.5.14.8.

*Veterinary Administrations of importing countries* should require:

for equid semen

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 vaccinated against AHS within 40 days prior to the day of collection;
- 3. were either:
  - a) kept in an AHSV free country or *zone* for at least 40 days before commencement of, and during collection of the semen, or
  - b) kept in a AHSV free vector-proof *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 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 2.5.14.9.

*Veterinary Administrations of importing countries* should require:

for *in vivo* derived equid embryos/oocytes

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 semen and for the following 40 days;

- b) had not been vaccinated against AHS within 40 days prior to the day of collection;
- c) were either
  - i) kept in an AHSV free country or *zone* for at least 40 days before commencement of, and during collection of the embryos/oocytes, or
  - ii) kept in a AHSV free vector-proof 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 negative result on a blood sample collected at least 28 days and not more than 90 days after the last collection of embryos/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/oocytes collection for this consignment;
- 2. the embryos were collected, processed and stored in conformity with the provisions of Appendix 3.3.1;
- 3. semen used to fertilize the oocytes, complies at least with the requirements in Article 2.5.14.8.

Article 2.5.14.10.

### **Protecting animals from *Culicoides* attack**

When transporting equines through AHSV infected countries or *zones*, *Veterinary Administrations* should require strategies to protect animals from attack from *Culicoides* likely to be competent AHSV vectors during transport, taking into account the local ecology of the vector.

Potential risk management strategies include a combination of:

1. treating animals with chemical repellents prior to and during transportation, in insecticide treated and sanitized *vehicles*;
2. *loading*, transporting and *unloading* animals at times of low vector activity (i.e. bright sunshine and low temperature);
3. ensuring *vehicles* do not stop en route during dawn or dusk, or overnight, unless the animals are held behind insect proof netting;
4. darkening the interior of the *vehicle*, for example by covering the roof and/or sides of vehicles with shade cloth;
5. monitoring for vectors at common stopping and offloading points to gain information on seasonal variations;
6. using historical, ongoing and/or AHS modelling information to identify low risk ports and transport routes.



## APPENDIX 3.8.X.

**GUIDELINES ON SURVEILLANCE  
FOR AFRICAN HORSE SICKNESS**

Article 3.8.X.1.

**Introduction**

This Appendix defines the principles and provides a guide on surveillance for African horse sickness (AHS), complementary to Appendix 3.8.1., applicable to countries seeking recognition for a declared African horse sickness virus (AHSV) status. This may be for the entire country or *zone*. Guidelines for countries seeking free status following an *outbreak* and for the maintenance of AHS status are also provided.

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.

In addition to the general conditions described in Chapter 2.5.14. of the *Terrestrial Code*, a Member Country declaring 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 Appendix. 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 wild equid populations should be included in surveillance when these animals are intended for trade.

**Case definition**

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 of 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.

The following defines the occurrence of AHSV infection:

1. AHSV has been isolated and identified as such 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 confirmed or suspected *case*, or giving cause for suspicion of previous association or contact with AHSV, or

Appendix XXXVII (contd)

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 confirmed or suspected *case*, or give cause for suspicion of previous association or contact with AHSV.

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

## Article 3.8.X.2.

**General conditions and methods**

1. A surveillance system should be under the responsibility of the *Veterinary Administration*. 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, epidemiologic and surveillance data.
2. The AHS surveillance programme should:
  - a) in a country/*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 an *approved 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 Appendix 3.8.1.

## Article 3.8.X.3.

**Surveillance strategies**

The target population for surveillance aimed at identification of *disease* and/or *infection* should cover susceptible domestic 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 country should justify the surveillance strategy chosen as appropriate to detect the presence of AHSV infection in accordance with Appendix 3.8.1. 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 Country 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 applicant country must justify the choice of design prevalence and confidence level based on the objectives of surveillance and the epidemiological situation, in accordance with Appendix 3.8.1. 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 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 equid populations is useful 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;

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- 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 guidelines 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 and/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 *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 *zone* by a *buffer 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 managed at fixed locations 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 equid 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.

The main purpose of vector surveillance is to define 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.

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.

Appendix XXXVII (contd)

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.

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## CHAPTER 2.6.6.

## AFRICAN SWINE FEVER

## Article 2.6.6.1.

The pig is the only natural host for African swine fever (ASF) virus. The definition of pig includes 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 wildpigs 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 2.6.6.2.

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 field and/or laboratory investigations;
2. an on-going awareness programme should be in place to encourage reporting of all cases suggestive of ASF;
3. the *Veterinary Administration* should have current knowledge of, and authority over, all domestic pigs in the country, *zone* or *compartment*;
4. the *Veterinary Administration* should have current knowledge about the population and habitat of wild pigs in the country or *zone*.

## Article 2.6.6.3.

**ASF free country, zone or compartment**1. ASF free status

- a) Historically free status

A country or *zone* may be considered free from the disease without formally applying a specific surveillance programme if the provisions of Article 3.8.1.6. are complied with.

- b) Free status as a result of an eradication programme

A country or *zone* which does not meet the conditions of point a) above or a *compartment* may be considered free from ASF when:

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- i) there has been no *outbreak* of ASF during the past 3 years; this period can be reduced to 12 months when there is no evidence of tick involvement in the epidemiology of the infection;
- ii) surveillance in accordance with Appendix 3.8.8. has been in place in domestic pigs for the past 12 months;
- iii) no evidence of ASFV infection has been found during the past 12 months;

AND

in the case of a *country* or *zone*, surveillance in accordance with Appendix 3.8.8. has been in place to determine the ASF status of the wild pig population, and:

- c) there has been no clinical evidence, nor virological evidence of ASF in wild pigs during the past 12 months;
- d) no seropositive wild pigs have been detected in the age class 6-12 months during the past 12 months;
- e) imported wild pigs comply with the relevant requirements in Article 2.6.6.9.

Article 2.6.6.4.

**Recovery of free status**

Should an ASF *outbreak* occur in a free *country*, *zone* or *compartment*, the status of the *country*, *zone* or *compartment* may be restored where surveillance in accordance with Appendix 3.8.8. has been carried out with negative results, either:

1. 3 months after the last *case* where a *stamping-out policy* is practised and there is no evidence of tick involvement in the epidemiology of the infection;

OR

2. in the case where ticks are suspected to be involved in the epidemiology of the infection, 3 months after the last *case* where a *stamping-out policy*, followed by acaricide treatment and the use of sentinel pigs, is practised;

OR

3. where a *stamping-out policy* is not practiced the provisions of point b) of Article 2.6.6.3. should be followed;

AND

4. in the case of a *country* or *zones*, based on surveillance in accordance with Appendix 3.8.8., ASF infection is not known to occur in any wild pig population in the *country* or *zone*.

Article 2.6.6.5.

When importing from *countries*, *zones* or *compartments* free of ASF, *Veterinary Administrations* should require:

for domestic pigs

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 a country, *zone* or *compartment* free of ASF since birth or for at least the past 40 days.

Article 2.6.6.6.

When importing from countries or *zones* with ASF infection in domestic pigs, *Veterinary Administrations* should require:

for domestic pigs

the presentation of an *international veterinary certificate* attesting that the animals:

1. were kept since birth or for the past 40 days in a ASF free *compartment*;
2. showed no clinical sign of ASF on the day of shipment

Article 2.6.6.7.

When importing from countries or *zones* free of ASF, *Veterinary Administrations* should require:

for wild pigs

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 a country or *zone* free from ASF;

Article 2.6.6.8.

When importing from countries, *zones* or *compartments* free of ASF, *Veterinary Administrations* should require:

for semen of domestic pigs

the presentation of an *international veterinary certificate* attesting that:

1. the donor animals:
  - a) were kept in a country, *zone* or *compartment* free of ASF since birth or for at least 40 days in accordance with Article 2.6.6.6.;
  - 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 Appendix 3.2.2.

Article 2.6.6.9.

When importing from countries or *zones* considered infected with ASF in domestic pigs, *Veterinary Administrations* should require:

Appendix XXXVIII (contd)for semen of domestic pigs

the presentation of an *international veterinary certificate* attesting that the donor animals were kept in a *compartment* free of ASF and the semen was collected in accordance with Article 2.6.6.8.

Article 2.6.6.10.

When importing from countries, *zones* or *compartments* free of ASF, *Veterinary Administrations* should require:

for *in vivo* derived embryos of pigs

the presentation of an *international veterinary certificate* attesting that:

1. the donor females:
  - a) were kept in a country, *zone* or *compartment* free of ASF in domestic pigs since birth or for at least 40 days in accordance with Article 2.6.6.6.;
  - 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 Appendix 3.3.1.

Article 2.6.6.11.

When importing from countries or *zones* considered infected with ASF in domestic pigs, *Veterinary Administrations* should require:

for *in vivo* derived embryos of pigs

the presentation of an *international veterinary certificate* attesting that the donor females were kept in a *compartment* free of ASF and the embryos were collected in accordance with 2.6.6.10.

Article 2.6.6.12.

When importing from countries, *zones* or *compartments* free of ASF, *Veterinary Administrations* should require:

for *fresh meat* of domestic pigs

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

1. have been kept in a country, *zone* or *compartment* free of ASF since birth or for at least the past 40 days;
2. have been slaughtered in an *approved abattoir*, have been subjected to ante-mortem and post-mortem inspections and have been found free of any sign suggestive of ASF.

Article 2.6.6.13.

When importing from countries or *zones* free of ASF, *Veterinary Administrations* should require:



for fresh meat of wild pigs

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

1. have been killed in a country or *zone* free of ASF;
2. have been subjected to a post-mortem inspection in an approved examination centre, and have been found free of any sign suggestive of ASF.

Article 2.6.6.14.

*Veterinary Administrations of importing countries* should require:

for 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

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 2.6.6.12. or 2.6.6.13., as relevant;
  - b) in a processing establishment:
    - i) approved by the *Veterinary Administration* for export purposes;
    - ii) processing only meat meeting the conditions laid down in Articles 2.6.6.12. or 2.6.6.13., as relevant;

OR

2. have been processed in an establishment approved by the *Veterinary Administration* 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 2.6.6.15.

*Veterinary Administrations of importing countries* should require:

for products of animal origin (from pigs, but not derived from fresh meat) intended for use in animal feeding and for agricultural or industrial use

the presentation of an *international veterinary certificate* attesting that the products:

1. have been prepared:
  - a) exclusively from products meeting the conditions laid down for *fresh meat* in Articles 2.6.6.12. or 2.6.6.13., as relevant;
  - b) in a processing establishment:

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- i) approved by the *Veterinary Administration* for export purposes;
- ii) processing only products meeting the conditions laid down in point a) above;

OR

2. have been processed in an establishment approved by the *Veterinary Administration* 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 2.6.6.16.

*Veterinary Administrations of importing countries* should require:

for litter and manure (from pigs)

the presentation of an *international veterinary certificate* attesting that the products:

1. come from a country, *zone* or *compartment* free of ASF; or
  2. have been processed in an establishment approved by the *Veterinary Administration* 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 2.7.13.

## NEWCASTLE DISEASE

## Article 2.7.13.1

1. An outbreak of Newcastle Disease (ND) for the purpose of the *Terrestrial Code* is defined in the *Terrestrial Manual* as an infection of birds caused by a virus 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.'

Viruses classified as APMV-1 are synonymous with Newcastle disease virus (NDV). Those viruses that meet the criteria of virulence to be the cause of ND are termed virulent Newcastle disease virus (vNDV). All other APMV-1s that do not meet the criteria for vNDV are termed low virulent NDV (loNDV).

2. Poultry is defined as 'all domesticated birds 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'. All backyard and game fowl regardless of use will be defined as poultry.

Birds that are kept in captivity for any reason other than those defined as poultry, including those that are kept for shows, races, exhibitions, competitions, or sale are not considered to be poultry.

3. This chapter only deals with vNDV infection of birds in the presence or absence of clinical signs. For the purposes of *international trade*, a country should interpret an occurrence of infection with vNDV in birds other than poultry according to the *Terrestrial Code* and should not impose immediate trade bans, although such infections should be notified.
4. The following defines the occurrence of infection with vNDV:
  - a) vNDV has been isolated and identified as such or viral RNA specific for vNDV has been detected.
  - b) For the purposes of the *Terrestrial Code*, the *incubation period* for ND shall be 21 days.
  - c) 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*.

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## Article 2.7.13.2.

The ND status of a country, a *zone* or a *compartment* can only be determined and certified 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 vNDV infection in the absence of clinical signs in poultry, this may be achieved through an ND surveillance programme in accordance with Appendix 3.8.x.

## Article 2.7.13.3.

**ND free country, zone or compartment**

A country, *zone* or *compartment* may be considered free from ND when it has been shown that vNDV infection has not been present in the country, *zone* or *compartment* for the past 12 months, based on surveillance in accordance with Appendix x.x.x. 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 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 Appendix x.x.x. has been carried out during that three-month period.

## Article 2.7.13.4.

When importing from an ND free country, *zone* or *compartment* as defined in Article 2.7.13.3, *Veterinary Administrations* should require:

for live poultry (other than day-old poultry)

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 have not been vaccinated against ND or if the birds were vaccinated against ND the nature of the vaccine used and the date of vaccination shall be attached to the certificate;
4. the birds are transported in new or appropriately sanitized containers.

## Article 2.7.13.5.

Regardless of the ND status of the country, *zone* or *compartment* of origin, *Veterinary Administrations* should require:

for live birds other than poultry

the presentation of an *international veterinary certificate* attesting that:

1. the birds showed no clinical sign suggestive of ND 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 with a virus which would be considered ND in poultry during the isolation period;
3. the birds were subjected to a diagnostic test 7 to 14 days prior to shipment to demonstrate freedom from infection with vNDV;
4. the birds are transported in new or appropriately sanitized containers;
5. the birds have not been vaccinated against ND or if the birds were vaccinated against ND the nature of the vaccine used and the date of vaccination shall also be attached to the certificate.

Article 2.7.13.6.

When importing from an ND free country, *zone* or *compartment* as defined in Article 2.7.13.3, *Veterinary Administrations* should require:

for day-old live poultry

the presentation of an *international veterinary certificate* attesting that:

1. the poultry were hatched and kept in an ND free country, *zone* or *compartment*;
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 have not been vaccinated against ND or if poultry or parent flocks were vaccinated against ND the nature of the vaccine used and the date of vaccination shall also be attached to the certificate;
4. the birds are transported in new or appropriately sanitized containers.

Article 2.7.13.7.

Regardless of the ND status of the country, *zone* or *compartment*, *Veterinary Administrations* should require:

for day-old live birds other than poultry

the presentation of an *international veterinary certificate* attesting that:

1. the birds showed no clinical sign suggestive of ND 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 vNDV;
4. the birds are transported in new or appropriately sanitized containers;

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5. the birds have not been vaccinated against ND or if the birds or parent flocks were vaccinated against ND the nature of the vaccine used and the date of vaccination shall also be attached to the certificate.

## Article 2.7.13.8.

When importing from an ND free country, *zone* or *compartment* as defined in Article 2.7.13.3., *Veterinary Administrations* should require:

for hatching eggs from poultry

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 parent flocks have not been vaccinated against ND; or if parent flocks were vaccinated against ND the nature of the vaccine used and the date of vaccination shall also be attached to the certificate;
4. the eggs are transported in new or appropriately sanitized containers.

## Article 2.7.13.9.

Regardless of the ND status of the country, *zone* or *compartment*, *Veterinary Administrations* should require:

for hatching eggs from birds other than poultry

the presentation of an *international veterinary certificate* attesting that:

1. 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 vNDV;
2. the birds are transported in new or appropriately sanitized containers;
3. the parent flocks have not been vaccinated against ND; or if parent flocks were vaccinated against ND the nature of the vaccine used and the date of vaccination shall also be attached to the certificate.

## Article 2.7.13.10.

When importing from an ND free country, *zone* or *compartment* as defined in Article 2.7.13.3., *Veterinary Administrations* should require:

for poultry eggs for human consumption

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 packing material.

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## Article 2.7.13.11.

When importing from an ND free country, *zone* or *compartment* as defined in Article 2.7.13.3., *Veterinary Administrations* should require:

for poultry egg products

the presentation of an *international veterinary certificate* attesting that:

1. the egg products come from, and were processed in, an ND free country, *zone* or *compartment*;
2. the egg products are transported in new or appropriately sanitized containers.

## Article 2.7.13.12.

Regardless of the ND status of the country, *zone* or *compartment* of origin, *Veterinary Administrations* should require:

for poultry egg products

the presentation of an *international veterinary certificate* attesting that:

1. the *commodity* is processed to ensure the destruction of vNDV;
2. the necessary precautions were taken after processing to avoid contact of the *commodity* with any source of vNDV;
3. the egg products are transported in new or appropriately sanitized containers.

## Article 2.7.13.13.

When importing from an ND free country, *zone* or *compartment* as defined in Article 2.7.13.3., *Veterinary Administrations* should require:

for poultry semen

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 2.7.13.14.

Regardless of the ND status of the country, *zone* or *compartment* of origin, *Veterinary Administrations* should require:

for semen of birds other than poultry

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;

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2. showed no clinical sign suggestive of ND during the isolation period and on the day of semen collection;
3. were subjected to a diagnostic test 7 to 14 days prior to semen collection to demonstrate freedom from infection with vNDV.

Article 2.7.13.15.

When importing from an ND free country, *zone* or *compartment* as defined in Article 2.7.13.3, *Veterinary Administrations* should require:

for fresh meat of poultry

the presentation of an *international veterinary certificate* attesting that the entire consignment of *fresh meat* comes from birds:

1. which have been kept and slaughtered 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* and have been subjected to ante-mortem and post-mortem inspections in accordance with Appendix 3.10.1. and have been found free of any sign suggestive of ND.

Article 2.7.13.16.

Regardless of the ND status of the country, *zone* or *compartment* of origin, *Veterinary Administrations* should require:

for meat products of poultry

the presentation of an *international veterinary certificate* attesting that:

1. the *commodity* is derived from *fresh meat* which meet the requirements of Article 2.7.13.15 (*fresh meat*) and has been processed in an ND free country, *zone* or *compartment*; or the *commodity* has been processed to ensure the destruction of vNDV (under study);
2. the necessary precautions were taken to avoid contact of the *commodity* with any source of vNDV.

Article 2.7.13.17.

Regardless of the ND status of the country, *zone* or *compartment* of origin, *Veterinary Administrations* should require:

for products of poultry origin intended for use in animal feeding, or for agricultural or industrial use

the presentation of an *international veterinary certificate* attesting that:

1. these *commodities* come from poultry which have been kept and processed in an ND free country, *zone* or *compartment* since they were hatched or for at least the past 21 days; or these *commodities* have been processed to ensure the destruction of vNDV (under study);
2. the necessary precautions were taken to avoid contact of the *commodity* with any source of vNDV.



## Article 2.7.13.18.

Regardless of the ND status of the country, *zone* or *compartment* of origin, *Veterinary Administrations* should require:

for feathers and down

the presentation of an *international veterinary certificate* attesting that:

1. these *commodities* come from poultry which have been kept and processed in an ND free country, *zone* or *compartment* since they were hatched or for at least the past 21 days; or these *commodities* have been processed to ensure the destruction of vNDV (under study);
2. the necessary precautions were taken to avoid contact of the *commodity* with any source of vNDV.

## Article 2.7.13.19.

Regardless of the ND status of the country, *zone* or *compartment*, *Veterinary Administrations* should require for the importation of:

meat or other products from birds other than poultry

the presentation of an *international veterinary certificate* attesting that:

1. the *commodity* has been processed to ensure the destruction of vNDV (under study);
  2. the necessary precautions were taken after processing to avoid contact of the *commodity* with any source of vNDV.
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## APPENDIX 3.8.X.

## GUIDELINES ON SURVEILLANCE FOR NEWCASTLE DISEASE

Article 3.8.X.1.

### Introduction

This Appendix defines the principles and provides a guide on the surveillance for Newcastle Disease (ND) in accordance with Appendix 3.8.1., applicable to countries seeking recognition for a declared ND status, with or without the use of vaccination. This may be for the entire country, *zone* or *compartment*. Guidance for countries seeking free status following an *outbreak* and for the maintenance of ND status are provided. This Appendix complements Chapter 2.7.13.

Surveillance for ND is complicated by the known prevalence 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. Consequently it is required that APMV-1 isolates synonymous with Newcastle disease virus (NDV) be characterized to differentiate those infections of virulent NDV (vNDV) that are notifiable as defined in Chapter 2.7.13. from those of low virulence (loNDV) which are not. Newcastle Disease (ND) is described in Chapter x.x.x.x as an infection of birds with APMV-1, however this appendix is only concerned with vNDV infections of poultry.

The impact and epidemiology of ND differ widely in different regions of the world and therefore it is not possible to provide specific guidelines 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 country 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 Member Countries to provide a well-reasoned argument to prove freedom from vNDV 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 vNDV infection.

Article 3.8.X.2.

### General conditions and methods

1. A surveillance system in accordance with Appendix 3.8.1. should be under the responsibility of the *Veterinary Administration*. In particular there should be in place:
  - a) a formal and ongoing system for detecting and investigating *outbreaks of disease* or vNDV *infection*;
  - b) a procedure for the rapid collection and transport of samples from suspect cases of ND to an *approved laboratory* for ND diagnosis as described in the *Terrestrial Manual*;
  - c) a system for recording, managing and analysing diagnostic and surveillance data.

Appendix XI (contd)

## 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 Administration*. 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 an *approved laboratory*. 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, (eg those adjacent to an ND infected population, *zone, compartment*, places where birds and poultry of different origins are mixed, or other sources of vNDV).

An effective surveillance system may periodically identify suspicious cases that require follow-up and investigation to confirm or exclude that the cause of the condition is due to vNDV 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 vNDV 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.).

Article 3.8.X.3.

**Surveillance strategies**1. Introduction

The principles involved in surveillance for *disease / infection* are technically well defined. 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 vNDV infection/circulation needs to be carefully followed to avoid producing results that are either unreliable, or excessively costly and logistically complicated.

If a country wishes to declare freedom from vNDV infection in a country, *zone* or *compartment*, the sub-population used for surveillance *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 at least every 6 months. 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* (Chapter x.x.x.x). If alternative tests are used they must have been validated as fit-for-purpose in accordance with OIE standards. A country should justify the surveillance strategy chosen as adequate to detect the presence of vNDV infection in accordance with Appendix 3.8.1. and the prevailing epidemiological situation.

For random surveillance, the design of the sampling strategy will need to be of an epidemiologically appropriate design to demonstrate the prevalence of vNDV infection. The sample size selected for testing should be large enough to detect *infection* if it were to occur at a predetermined minimum rate. The sample size and expected disease prevalence determine the level of confidence in the results of the survey. The survey design and frequency of sampling should be dependent on the historical and current local epidemiological situation. The applicant country must justify the choice of survey design and confidence level based on the objectives of surveillance and the epidemiological situation, in accordance with Appendix 3.8.1.

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 2.7.13.2) 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.

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 vNDV 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 (eg a drop in feed or water consumption or egg production) is important for the early detection of vNDV 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 vNDV.

A presumptive diagnosis of clinical ND in suspect infected populations should always be confirmed by virological testing in an approved 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:

Appendix XL (contd)

- 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 eg 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 NDV but is not diagnostic of the presence of vNDV. Test procedures and interpretations of results are as described in Chapter x.x.x of the *Terrestrial Manual*. Positive NDV antibody test results can have four possible causes:

- a) natural infection with NDV;
- b) vaccination against ND (whether intentional or not);
- 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 4 weeks;
- d) 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 guidelines and the requirement for a statistically valid survey for the presence of NDV should not be compromised.

Discovery of seropositive, unvaccinated flocks must be investigated further by conducting a thorough epidemiological investigation. Since seropositive results are not necessarily indicative of active infection, virological surveillance should be used to confirm the presence of vNDV in such populations. Until validated strategies and tools to differentiate vaccinated animals from those infected with field ND viruses 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 in susceptible populations to detect virus circulation by the presence of clinical disease or seroconversion. 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 ideally be immunologically naïve and may be used in vaccinated flocks subject to a risk assessment. The type of vaccine used and local epidemiological factors will determine the frequency of placement and monitoring of the sentinels.

Sentinel poultry must be in close contact with, but should be identified to be clearly differentiated from, the target population. Sentinel poultry must be observed regularly for evidence of clinical disease and any disease incidents investigated by prompt virological 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 will depend on the type of vaccine used in the target population.

## Article 3.8.X.4.

**Documentation of ND free status**

The requirements for a country, *zone* or *compartment* to declare freedom from ND are given in Article x.x.13.3.

A country, *zone* or *compartment* may be considered free from ND when it has been shown that vNDV infection has not been present in the country, *zone* or *compartment* for the past 12 months, based on surveillance in accordance with Appendix x.x.x. 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 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 Appendix x.x.x. has been carried out during that three-month period.

1. Countries declaring freedom from ND for the country, *zone* or *compartment*

In addition to the general conditions described in the *Terrestrial Code*, a Member Country 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 Appendix to demonstrate absence of vNDV infection in poultry during the preceding 12 months. This requires the support of an *approved laboratory* capable of identification of vNDV infection through virus detection and antibody tests described in the *Terrestrial Manual*.

2. Additional requirements for countries, *zones* or *compartments* that practice vaccination

Vaccination against ND may be used for risk management (to reduce the risk of introduction and subsequent transmission) or as 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 must also comply with the provisions stipulated for ND vaccines in the *Terrestrial Manual*.

In ~~all~~ vaccinated populations there is a need to perform surveillance (Article x.x.x) to ensure the absence of vNDV circulation. The use of sentinel poultry may provide further confidence of the absence of virus circulation. The surveillance must be repeated at least every 6 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 3.8.X.5.

**Countries, *zones* or *compartments* regaining freedom from ND following an outbreak**

In addition to the general conditions described in Chapter 2.7.13., a country regaining country, *zone* or *compartment* freedom from vNDV 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 poultry may facilitate the interpretation of surveillance results.

Appendix XXL (contd)

A country declaring freedom of a country, *zone* or *compartment* after an *outbreak* of ND (with or without vaccination) should report the results of an active surveillance programme in which the ND susceptible poultry population undergoes regular clinical examination and active surveillance planned and implemented according to the general conditions and methods described in these guidelines. The surveillance should give at least the same confidence that can be achieved by testing a randomized representative sample of the populations at risk.

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## CHAPTER 2.2.XX.

### WEST NILE FEVER

#### Article 2.2.XX.1.

West Nile fever (WNF) is a zoonotic disease caused by the mosquito-borne West Nile virus (WNV).

For the purpose of this Chapter the susceptible species are equidae, geese, ducks (under study) and chicks less than 12 days old and birds other than poultry.

Birds are responsible for virus dispersal, including reintroduction of WNV from endemic areas into regions that may subsequently experience sporadic outbreaks.

Although most avian species are susceptible to infection, the outcome of the infection is highly variable according to the species. Chickens and turkeys are usually resistant to disease and do not develop viremia sufficient to infect mosquitoes, with the exception of chicks less than 12 days old.

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.

Many animal species are known to be susceptible to WNV infection and outbreaks of a fatal neurological disease have been reported in humans, equidae, geese and wild birds.

In relation to domestic animal trade, geese and ducks might represent a risk for the spread the WNF as some species have been documented to develop a viremia sufficient to infect mosquitoes.

WNV has been reported to date in a wide geographical range that includes portions of Europe, Asia, Africa, Australia and the Americas. Although competent vectors and susceptible bird species are nearly ubiquitous, WNV circulation in sylvatic cycles may spill over occasionally in domestic population.

Surveillance for WNF will be carried out according to Appendix 3.8.X.

The following defines the occurrence of WNF case:

1. WNV has been isolated and identified as such from an animal, including human; or
2. viral antigen or viral RNA specific to WNV has been identified in samples from one or more animals including human showing clinical signs consistent with WNF, or epidemiologically linked to a confirmed or suspected *outbreak* of WNF; or
3. antibodies to WNV that are not a consequence of vaccination, have been identified in an animal including human showing clinical signs consistent with WNF, or epidemiologically linked to a confirmed or suspected *outbreak* of WNF.

For the purposes of the *Terrestrial Code*, the *incubation period* for WNF shall be 3-15 days.

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

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## Article 2.2.XX.2.

**WNF infected country, zone or compartment**

A WNF infected country, *zone* or *compartment* is a country, *zone* or *compartment* clearly defined where a case of WNF has been reported during the past 2 years

## Article 2.2.XX.3.

**WNF free country, zone or compartment**

1. A country, *zone* or *compartment* may be considered free from WNF when WNF is notifiable in the whole country and either:
  - a) no clinical WNF *cases* have been recorded for the past 2 years; or
  - b) a surveillance programme in accordance with Appendix 3.8.X. has demonstrated no evidence of WNF in the country or *zone* or *compartment* during the past 2 years; or
  - c) a surveillance programme has demonstrated no evidence of *Culex* mosquitoes in the country, *zone* or *compartment*.
2. A WNF free country, *zone* or *compartment* will not lose its free status through the importation from WNF infected countries, zones or compartment 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 that the animals are identified in the accompanying certification as having been vaccinated; or
  - d) animals not vaccinated if a surveillance programme in accordance with Appendix 3.8.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 2.2.XX.4.

**WNF seasonally free country or zone**

A WNF seasonally free country or *zone* is a country or a *zone* for which for part of a year, surveillance demonstrates no evidence either of WNV transmission or of adult *Culex* mosquitoes.

For the application of Articles 2.2.XX.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 adult *Culex* mosquitoes.

For the application of Articles 2.2.XX.6., the seasonally free period is taken to conclude either:

1. at least 21 days before the earliest date that historical data show WNV transmission cycle has recommenced; or

2. immediately if current climatic data or data from a surveillance programme indicate an earlier resurgence of activity of adult *Culex*.

A WNF seasonally free country or *zone* will not lose its free status through the importation of animals or semen or embryo and ova from infected countries or zones.

Article 2.2.XX.5.

When importing from WNF free countries, *zones* or *compartments* *Veterinary Administrations* should require:

for susceptible species

the presentation of an *international veterinary certificate* attesting that:

1. the animals were kept in a WNF free country, *zone* or *compartment* since birth or for at least 30 days prior to shipment; or
2. the animals were kept in a WNF free country, *zone* or *compartment* for at least 7 days, were subjected, with negative results, 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 free country, *zone* or *compartment* until shipment; or
3. the animals:
  - a) were vaccinated in accordance with the *Terrestrial Manual* 30 days before introduction into the free country, *zone* or *compartment*; and
  - b) were identified as having been vaccinated; and
  - c) were kept in a WNF free country or *zone* for at least 7 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 *zone* during transportation to the *place of shipment*; or
  - b) were protected from attack from WNV mosquito vectors at all times when transiting through an infected *zone*, or
  - c) had been vaccinated in accordance with point 3 above.

Article 2.2.XX.6.

When importing from WNF seasonally free countries or *zones*, *Veterinary Administrations* should require:

for susceptible species

the presentation of an *international veterinary certificate* attesting that the animals:

Appendix XLI (cond)

1. were kept during the seasonally free period in a WNF seasonally free country or *zone* 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 7 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 at 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*, 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 free country or *zone*, either:
  - a) did not transit through an infected country or *zone* during transportation to the *place of shipment*; or
  - b) were protected from attack from WNV mosquito vectors at all times when transiting through an infected country or *zone*, or
  - c) were vaccinated in accordance with point 3 above.

Article 2.2.XX.7.

When importing from WNF infected countries or *zones*, *Veterinary Administrations* should require:

for susceptible species

the presentation of an *international veterinary certificate* attesting that the animals:

1. were protected from attack from WNV mosquito vectors 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 attack from WNV mosquito vectors 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 in accordance with the *Terrestrial Manual* at least 30 days before shipment, 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 Appendix 3.8.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 attack from WNV mosquito vectors during transportation to the *place of shipment*; or
7. were vaccinated 30 days before shipment or had antibodies against WNV.

Article 2.2.XX.8.

When importing wild birds, *Veterinary Administrations* 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.

Article 2.2.XX.9.

### **Protecting animals from WNV mosquito vectors**

When transporting animals through WNF infected countries or *zones*, *Veterinary Administrations* should require strategies to protect animals from attack from WNV mosquito vectors during transport, taking into account the local ecology of the vectors.

Potential risk management strategies include:

1. treating animals with chemical 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.
-



### Model Veterinary Certificate for International Trade in Live Animals and Hatching Eggs

**COUNTRY:**

<b>Part I: Details of dispatched consignment</b>	I.1. Consignor Name		I.2. Certificate reference number		
	Address		I.3. Veterinary Administration		
			I.4. Veterinary Authority		
	I.5. Consignee Name				
	Address				
	I.6. Country of origin		ISO code	I.7. Zone or compartment of origin	
	I.8. Country of destination		ISO code	I.9. Zone or compartment of destination	
	I.10. Place of origin Name				
	Address				
	I.11. Place of shipment Address		I.12. Date of departure		
	I.13. Means of transport Aeroplane <input type="checkbox"/> Ship <input type="checkbox"/> Railway wagon <input type="checkbox"/> Road vehicle <input type="checkbox"/> Other <input type="checkbox"/>		I.14. Expected border post		
	Identification:		I.15. CITES permit No(s).		
	I.16. Description of commodity		I.17. Commodity code (HS code)		
				I.18. Quantity	
	I.19.			I.20. Number of packages	
I.21. Identification of container/seal number			I.22.		
I.23. Commodities intended for use as: Breeding/rearing <input type="checkbox"/> Competition <input type="checkbox"/> Slaughter <input type="checkbox"/> Game restocking <input type="checkbox"/> Pets <input type="checkbox"/> Circus/exhibition <input type="checkbox"/> Other <input type="checkbox"/>					
I.24. For import or admission Definitive import <input type="checkbox"/> Re-entry <input type="checkbox"/> Temporary admission <input type="checkbox"/>					
I.25. Identification of the commodities					
Species (Scientific name)		Breed / Category	Identification system	Identification number/details	
Age		Sex	Quantity		

Appendix XLII (cond)

**COUNTRY:**

<b>Part II: Zoosanitary information</b>	II.a. Certificate reference number						
	<p>II. The undersigned Official Veterinarian certifies that the animal(s)/hatching eggs described above satisfy(ies) the following requirements:</p>						
<p>Official Veterinarian</p> <table><tr><td>Name and address (in capital letters):</td><td>Qualification and title</td></tr><tr><td>Date:</td><td>Signature:</td></tr><tr><td>Stamp</td><td></td></tr></table>		Name and address (in capital letters):	Qualification and title	Date:	Signature:	Stamp	
Name and address (in capital letters):	Qualification and title						
Date:	Signature:						
Stamp							



### Model Veterinary Certificate for International Trade in Embryos, Ova and Semen

#### COUNTRY:

<b>Part I: Details of dispatched consignment</b>	I.1. Consignor Name		I.2. Certificate reference number		
	Address		I.3. Veterinary Administration		
			I.4. Veterinary Authority		
	I.5. Consignee Name				
	Address				
	I.6. Country of origin		ISO code	I.7. Zone or compartment of origin	
	I.8. Country of destination		ISO code	I.9. Zone or compartment of destination	
	I.10. Place of origin Name				
	Address				
	I.11. Place of shipment Address		I.12. Date of departure		
	I.13. Means of transport Aeroplane <input type="checkbox"/> Ship <input type="checkbox"/> Railway wagon <input type="checkbox"/> Road vehicle <input type="checkbox"/> Other <input type="checkbox"/>		I.14. Expected border post		
	Identification:		I.15. CITES permit No(s).		
	I.16. Description of commodity		I.17. Commodity code (HS code)		
			I.18. Quantity		
	I.19.		I.20. Number of packages		
	I.21. Identification of container/seal number		I.22.		
	I.23. Commodities intended for use as: Artificial reproduction <input type="checkbox"/> Other <input type="checkbox"/>				
	I.24.				
	I.25. Identification of the commodities				
	Species (Scientific name)		Breed/	Category	Donor identity
	Approval number of the centre/team		Identification mark		Quantity

Appendix XLIII (cond)

**COUNTRY:**

<b>Part II: Zoosanitary information</b>	II.a. Certificate reference number
	II. The undersigned Official Veterinarian certifies that the embryos/ova/semen described above satisfy(ies) the following requirements:
<b>Official Veterinarian</b>	
Name and address (in capital letters):	Qualification and title
Date:	Signature:
Stamp	

### Model Veterinary Certificate for International Trade in Products of Animal Origin

**COUNTRY:**

<b>Part I: Details of dispatched consignment</b>	I.1. Consignor Name		I.2. Certificate reference number		
	Address		I.3. Veterinary Administration		
			I.4. Veterinary Authority		
	I.5. Consignee Name				
	Address				
	I.6. Country of origin		ISO code	I.7. Zone or compartment of origin	
	I.8. Country of destination		ISO code	I.9. Zone or compartment of destination	
	I.10. Place of origin Name				
	Address				
	I.11. Place of shipment Address		I.12. Date of departure		
	I.13. Means of transport Aeroplane <input type="checkbox"/> Ship <input type="checkbox"/> Railway wagon <input type="checkbox"/> Road vehicle <input type="checkbox"/> Other <input type="checkbox"/>		I.14. Expected border post		
	Identification:		I.15. CITES permit No(s).		
	I.16. Description of commodity		I.17. Commodity code (HS code)		I.18. Quantity
	I.19. Temperature of product Ambient <input type="checkbox"/> Chilled <input type="checkbox"/> Frozen <input type="checkbox"/>			I.20. Number of packages	
	I.21. Identification of container/seal number			I.22. Type of packaging	
I.23. Commodities intended for use as: Human consumption <input type="checkbox"/> Animal feed <input type="checkbox"/> Further processing <input type="checkbox"/> Technical use <input type="checkbox"/> Other <input type="checkbox"/>					
I.24.					
I.25. Identification of the commodities					
Species (Scientific name)		Nature of commodity		Treatment type	
Approval number of establishments					
Abattoir	Cutting plant/	Processing plant	Cold store/		
Number of packages		Net weight	Lot identification/date code		

Appendix XLIV (cond)

**COUNTRY:**

<b>Part II: Zoosanitary information</b>	II.a. Certificate reference number
	II. The undersigned Official Veterinarian certifies that the product(s) of animal origin described above satisfy(ies) the following requirements:
Official Veterinarian	
Name and address (in capital letters):	Qualification and title
Date:	Signature:
Stamp	

### Model Veterinary Certificate for International Trade in Bees and Brood Combs

**COUNTRY:**

<b>Part I: Details of dispatched consignment</b>	I.1. Consignor Name		I.2. Certificate reference number									
	Address		I.3. Veterinary Administration									
			I.4. Veterinary Authority									
	I.5. Consignee Name											
	Address											
	I.6. Country of origin		ISO code	I.7. Zone or compartment of origin								
	I.8. Country of destination		ISO code	I.9. Zone or compartment of destination								
	I.10. Place of origin Name											
	Address											
	I.11. Place of shipment Address		I.12. Date of departure									
	I.13. Means of transport Aeroplane <input type="checkbox"/> Ship <input type="checkbox"/> Railway wagon <input type="checkbox"/> Road vehicle <input type="checkbox"/> Other <input type="checkbox"/>		I.14. Expected border post									
	Identification:		I.15. CITES permit No(s).									
	I.16. Description of commodity		I.17. Commodity code (HS code)									
			I.18. Quantity									
	I.19.		I.20. Number of packages									
I.21. Identification of container/seal number		I.22.										
I.23. Commodities intended for use as: Breeding/rearing <input type="checkbox"/> Other <input type="checkbox"/>												
I.24.												
I.25. Identification of the commodities												
<table border="1"> <thead> <tr> <th>Category</th> <th>Breed / Variety</th> <th>Quantity</th> <th>Identification details</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>					Category	Breed / Variety	Quantity	Identification details				
Category	Breed / Variety	Quantity	Identification details									



## APPENDIX X.X.X

## NOTES FOR GUIDANCE ON THE VETERINARY CERTIFICATES FOR INTERNATIONAL TRADE IN LIVE ANIMALS, HATCHING EGGS AND PRODUCTS OF ANIMAL ORIGIN

General: Please complete the certificate in capitals. To confirm an option, mark the box with a cross (X).

### PART I. DETAILS OF DISPATCHED CONSIGNMENT

- Country: Name of the country that issues the certificate.
- Box I.1. Name and full address of the natural or legal person dispatching the consignment. Information on telephone and fax numbers or e-mail address is recommended.
- Box I.2. The certificate reference number is the number used by the Veterinary Authority of the country to identify the certificate.
- Box I.3. Name of the *Veterinary Administration*.
- Box I.4. Name of the *Veterinary Authority*.
- Box I.5. Name and full address of the natural or legal person to whom the consignment is destined.
- Box I.6. Name of the country from which the *animals, hatching eggs*, embryos, semen, ova or brood combs are being exported. For products, name the country(ies) where the finished products were produced, manufactured or packed.
- “ISO code” refers to the international standard two-letter code (ISO 3166-1 Alpha-2 Code) for a country produced by the International Organization for Standardization.
- Box I.7. Name of the zone or compartment of origin, if relevant, in part II of the certificate.
- Box I.8. Name of the country of destination.
- “ISO code” refers to the international standard two-letter code (ISO 3166-1 Alpha-2 Code) for a country produced by the International Organization for Standardization.
- Box I.9. Name of the zone or compartment of destination, if relevant, in part II of the certificate.
- Box I.10. Name and full address of the place(s) from which the *animals* or products are being exported; and official approval or registration number when required.
- For *animals* and *hatching eggs* the *establishment(s)*, wildlife or hunting reserves.
- For semen: the *artificial insemination centre*.
- For embryos and ova: the name, address and official approval number of the collection team (not the premises of storage).

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- For products of animal origin: the premises from which the products are to be dispatched.
- Box I.11. Name and full address of the place from which the *animals* or products are being shipped (this will be a land, sea or airport).
- Box I.12. Date of departure. For *animals* include the expected time of departure.
- Box I.13. Details of the means of transport.
- Identification of the means of transport: for air transport, the flight number; for maritime transport, the name of the vessel; for rail transport, the number of the train and the wagon and for road transport, the registration number of the road vehicle and the number of the trailer where used.
- Box I.14. Name of expected *border post* and, if available, its UN/LOCODE (refer to the United Nations Code for Trade and Transport Locations).
- Box I.15. CITES permit number(s) if the *commodity* concerns species listed in the Washington Convention.
- Box I.16. Describe the *commodity* or use the titles as they appear in the Harmonised System of the World Customs Organization.
- Box I.17. Heading or HS Code of the Harmonized System set up by the World Customs Organization.
- Box I.18. Quantity of the *commodity*.
- For *animals*, *hatching eggs* and animal products (semen, ova, embryos) give the total count of *animals*, eggs or straws.
- For products give the gross weight and the net weight in kg of the whole consignment.
- Box I.19. Temperature of products for transport and storage.
- Box I.20. Number of boxes, cages or stalls in which the *animals* or *hatching eggs* are being transported. Number of cryogenic containers for semen, ova, embryos. Number of packages for products.
- Box I.21. Identify the containers/seal numbers where required.
- Box I.22. Identify the type of packaging of products (e.g. cans, boxes).
- Box I.23. Intended use of the imported *animals* or products.
- Breeding/rearing: applies to *animal for breeding or rearing* and *hatching eggs*.
- Slaughter: applies to *animal for slaughter*.
- Game restocking: applies to game for the purpose of rebuilding stocks.
- Pet: applies to *animals* kept for companionship or enjoyment. This excludes livestock species.



Circus/exhibition: applies to *animals* used in a circus, show or exhibition.

Human consumption: applies to products intended for human consumption.

Animal feed: means any product of animal origin (single or multiple), whether processed, semi-processed or raw, which is intended to be fed to *animals*.

Further processing: applies to products of animal origin which have to be further processed before being suitable for end use.

Technical use: applies to products not intended for human or animal consumption. These include animal products that are intended for use in the pharmaceutical, medical, cosmetic and other industries. Such products may be subjected to extensive further processing.

Other: intended for purposes not listed elsewhere in this classification.

Box I.24. Mark, if appropriate.

Box I.25. Details on the nature of the *commodity* sufficient to identify it.

For *animals* and *hatching eggs*: Species (scientific name); Breed/Category; Identification system; Identification number or other identification details; Age; Sex; Quantity. For animals holding an official passport, the international animal passport number should be provided, and a copy of the details on the passport attached to the certificate.

For embryos, ova and semen: Species (Scientific name); Breed/Category; Identification mark according to the International Embryo Transfer Society (IETS) or the International Committee for Animal Recording (ICAR); Collection date; Approval number of the centre/team; Identification of the donor animal; Quantity.

For bees and brood combs: Category means hive with bees, swarm, consignment of bees (worker bees, drones), queen bees, brood-combs, royal cells, etc. Identification details include peculiarities (e.g. Marks or age or weight or surface).

For products of animal origin: Species (Scientific name); Nature of commodity; Treatment type; approval number of establishment(s) (e.g. dairy farm, abattoir; cutting plant; processing plant; cold store); Lot identification/date code; Quantity; Number of packages; Net weight.

## PART II. ZOOSANITARY INFORMATION

Box II. Complete this part in accordance with the requirements agreed between the Veterinary Administrations of the importing and exporting countries in accordance with the recommendations in the *Terrestrial Code*.

Box II.a. Reference number: see box I.2.

Official veterinarian: Name, address, qualification and title, date of signature and official stamp of the *Veterinary Services*.



## CHAPTER 1.2.1.

**GENERAL OBLIGATIONS**

## Article 1.2.1.1.

*International trade* in *animals* and animal products depends on a combination of factors which should be taken into account to ensure unimpeded trade, without incurring unacceptable risks to human and animal health.

Because of the likely variations in animal health situations, various options are offered by the *Terrestrial Code*. The animal health situation in the *exporting country*, in the *transit country* or *countries* and in the *importing country* should be considered before determining the requirements which have to be met for trade. To maximise harmonisation of the sanitary aspects of *international trade*, *Veterinary Administrations* of Member Countries should base their import requirements on the OIE standards, guidelines and recommendations.

These requirements should be included in the model certificates approved by the OIE which form Part 4 of the *Terrestrial Code*.

Certification requirements should be exact and concise, and should clearly convey the wishes of the *importing country*. For this purpose, prior consultation between *Veterinary Administrations* of *importing* and *exporting countries* is useful and may be necessary. It enables the setting out of the exact requirements so that the signing veterinarian can, if necessary, be given a note of guidance explaining the understanding between the *Veterinary Administrations* involved.

When Members of a *Veterinary Administration* wish to visit another country for matters of professional interest to the *Veterinary Administration* of the other country, the latter should be informed.

## Article 1.2.1.2.

**Responsibilities of the importing country**

1. The import requirements included in the *international veterinary certificate* should assure that *commodities* introduced into the *importing country* comply with the national level of protection that it has chosen for animal and human health. *Importing countries* should restrict their requirements to those justified for such level of protection.
2. The *international veterinary certificate* should not include requirements for the exclusion of pathogens or animal *diseases* which are present within the territory of the *importing country* and are not subject to any *official control programme*. The requirements applying to pathogens or *diseases* subject to *official control programmes* in a country or *zone* should not provide a higher level of protection on imports than that provided for the same pathogens or *diseases* by the measures applied within that country or *zone*.
3. The *international veterinary certificate* should not include requirements for disease agents or *diseases* which are not OIE listed, unless the *importing country* has identified the disease agent as presenting a significant risk for that country, after conducting a scientifically based import risk analysis according to the guidelines in Section 1.3.

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4. The transmission by the *Veterinary Administration* of certificates or the communication of import requirements to persons other than the *Veterinary Administration* of another country, necessitates that copies of these documents are also sent to the *Veterinary Administration*. This important procedure avoids delays and difficulties which may arise between traders and *Veterinary Administrations* when the authenticity of the certificates or permits is not established.

This information is usually the responsibility of *Veterinary Administrations*. However, it can be the responsibility of *Veterinary Authorities* at the place of origin of the *animals* when it is agreed that the issue of certificates does not require the approval of the *Veterinary Administration*.

## Article 1.2.1.3.

**Responsibilities of the exporting country**

1. An *exporting country* should be prepared to supply the following information to *importing countries* on request:
  - a) information on the animal health situation and national animal health information systems to determine whether that country is free or has *free zones* of listed diseases, including the regulations and procedures in force to maintain its free status;
  - b) regular and prompt information on the occurrence of transmissible *diseases*;
  - c) details of the country's ability to apply measures to control and prevent the relevant *listed diseases*;
  - d) information on the structure of the *Veterinary Services* and the authority which they exercise;
  - e) technical information, particularly on biological tests and vaccines applied in all or part of the national territory.
2. *Veterinary Administrations* of *exporting countries* should:
  - a) have official procedures for authorisation of certifying veterinarians, defining their functions and duties as well as conditions covering possible suspension and termination of the appointment;
  - b) ensure that the relevant instructions and training are provided to certifying veterinarians;
  - c) monitor the activities of the certifying veterinarians to verify their integrity and impartiality.
3. The Head of the *Veterinary Service* of the *exporting country* is ultimately accountable for veterinary certification used in *international trade*.

## Article 1.2.1.4.

**Responsibilities in case of an incident ~~occurring after~~ related to importation**

1. *International trade* involves a continuing ethical responsibility. Therefore, if within the recognised *incubation periods* of the various diseases subsequent to an export taking place, the *Veterinary Administration* becomes aware of the appearance or reappearance of a *disease* which has been specifically included in the *international veterinary certificate*, there is an obligation for the Administration to notify the *importing country*, so that the imported stock may be inspected or tested and appropriate action be taken to limit the spread of the *disease* should it have been inadvertently introduced.

2. Equally, if a *disease* condition appears in imported stock within a time period after importation consistent with the recognised *incubation period* of the *disease*, the *Veterinary Administration* of the *exporting country* should be informed so as to enable an investigation to be made, since this may be the first available information on the occurrence of the *disease* in a previously free herd. The *Veterinary Administration* of the *importing country* should be informed of the result of the investigation since the source of infection may not be in the *exporting country*.
  
  3. In case of suspicion, on reasonable grounds, that an official certificate may be fraudulent, the *Veterinary Administration* of the *importing country* and *exporting country* should conduct an investigation. Consideration should also be given to notifying any third country(ies) that may have been implicated. All associated consignments should be kept under official control, pending the outcome of the investigation. The *Veterinary Administrations* of all countries involved should fully cooperate with the investigation. If the certificate is found to be fraudulent, every effort should be made to identify those responsible so that appropriate action can be taken according to the relevant legislation.
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## **GUIDELINES FOR THE CONTROL OF HAZARDS OF ANIMAL HEALTH AND PUBLIC HEALTH IMPORTANCE IN ANIMAL FEED**

### **PART 1**

#### **INTRODUCTION**

Animal feed is a critical component of the food-chain that has a direct impact on animal health and welfare and also on food safety and public health.

Historically, the OIE primarily addressed animal feed as an important pathway for the entry and spread of contagious epidemic diseases, such as foot and mouth disease, swine vesicular disease and avian influenza. In recent years, the role of feed as a vector for disease agents, including zoonotic organisms, was a focus of standards development in regards to bovine spongiform encephalopathy. Animal feed and feed ingredients are widely traded internationally and trade disruptions have the potential to impact economies in both developed and developing countries. Since 2002 the OIE has expanded its zoonotic disease mandate to encompass animal production food safety, working in collaboration with the Codex Alimentarius Commission (CAC) and other international organisations. In 2006 the International Committee resolved that the OIE should develop guidance on foodborne zoonoses and animal feeding, complementing relevant CAC texts.

#### **PURPOSE**

The purpose of this OIE guideline is to provide guidance on animal feeding in relation to animal health and to complement the guidance provided by the Codex Code of Practice on Good Animal Feeding (CAC/RCP 54-2004) which deals primarily with food safety.

This guideline aims at ensuring the control of animal and public health hazards through adherence to recommended practices during the production (procurement, handling, storage, processing and distribution) and use of both commercial and on-farm produced animal feed and feed ingredients for food producing animals.

#### **SCOPE**

This guideline applies to the production and use of all products destined for animal feed and feed ingredients at all levels whether produced commercially or on farm. It also includes grazing or free-range feeding, forage crop production and water for drinking. Swill feeding is a particular aspect of on-farm practice that is specifically addressed because of its recognised role in disease transmission.

This guideline deals with feed for food-producing animals other than aquatic animals (i.e. livestock and poultry).

#### **DEFINITIONS**

##### ***Hazard***

means a biological, chemical or physical agent in, or a condition of, feed or a feed ingredient with the potential to cause an adverse effect on animal or public health.

##### ***Feed***

means any material (single or multiple), whether processed, semi-processed or raw, which is intended to be fed directly to food-producing animals.

##### ***Feed additives***

means any intentionally added ingredient not normally consumed as feed by itself, whether or not it has nutritional value, which affects the characteristics of feed or animal products. Microorganisms, enzymes, acidity regulators, trace elements, vitamins and other products fall within the scope of this definition depending on the purpose of use and method of administration. This excludes veterinary drugs.

Appendix XLVIII (cond)***Medicated feed***

means any feed which contains a veterinary drug administered to food producing animals, for therapeutic or prophylactic purposes or for modification of physiological functions.

***Feed ingredient***

means a component part or constituent of any combination or mixture making up a feed, whether or not it has a nutritional value in the animal's diet, including feed additives. Ingredients are of plant, animal or aquatic origin, or other organic or inorganic substances.

***Undesirable substance***

means a contaminant or other substance which is present in and/or on feed and feed ingredients and which constitute a risk to animal or public health.

***Commercial feed***

means all materials that are sold and distributed as feed, or to be mixed with feed, for animals except: unmixed seed, whole, processed, or unprocessed; straw, stover, silage, cobs, husks, and hulls; or individual chemical compounds not mixed with other ingredients.

***Cross contamination***

means contamination of a material or product with another material or product containing a component that is potentially harmful for animal or public health or restricted under the regulatory framework.

**GENERAL PRINCIPLES****Roles and responsibilities**

The Competent Authority has the legal power to set and enforce regulatory animal feeding requirements, and has final responsibility for verifying that these requirements are met. The Competent Authority may establish regulatory requirements for relevant parties to provide it with information and assistance. Refer to Chapters 1.3.3. and 1.3.4. of the OIE *Terrestrial Code*.

Those involved in the production and use of animal feed and feed ingredients have the responsibility to ensure that these products meet regulatory requirements. All personnel involved in the manufacture, storage and handling of feed and feed ingredients should be adequately trained and aware of their role and responsibility in preventing the spread of animal health and public health hazards. Appropriate contingency plans should be developed. Equipment should be maintained in good working order and in a sanitary condition.

It is a particular responsibility of Veterinary Services to set and enforce the regulatory requirements pertaining to the use of veterinary drugs, animal disease control and the food safety aspects that relate to the management of live animals on farm.

Those providing specialist services to producers and to the feed industry (e.g. private veterinarians and laboratories) may be required to meet specific regulatory requirements pertaining to the services they provide (e.g. disease reporting, quality standards, transparency).

**Regulatory safety standards**

All feed and feed ingredients should meet regulatory safety standards. In defining limits and tolerances for hazards, scientific evidence, including the sensitivity of analytical methods and on the characterisation of risks, should be taken into account.



**Risk analysis (risk assessment, risk management and risk communication)**

Internationally accepted principles and practices on risk analysis (Section 1.3. of the OIE *Terrestrial Code*; and relevant Codex texts) should be used in developing and applying the regulatory framework.

Application of a generic framework should provide a systematic and consistent process for managing all biosecurity risks, while recognising the different risk assessment methodologies used in animal and public health.

**Good practices**

Where national guidelines exist, good agricultural practices and good manufacturing practices (including good hygienic practices) should be followed. Countries without such guidelines are encouraged to develop them.

Where appropriate, Hazard Analysis and Critical Control Point<sup>6</sup> (HACCP) principles should be followed to control hazards that may occur in feed.

**Geographic and environmental considerations**

Land and facilities used for production of animal feed and feed ingredients and water sources should not be located in close proximity to sources of hazards for animal health or food safety. Animal health considerations include factors such as disease status, location of quarantined premises and existence of zones/compartments of specified health status. Food safety considerations include factors such as industrial operations that generate pollutants and waste treatment plants.

**Zoning and compartmentalisation**

Feed is an important component of biosecurity and needs to be considered when defining a compartment or zone in accordance with Chapter 1.3.5. of the OIE *Terrestrial Code*.

**Sampling and analysis**

Sampling and analytical protocols should be based on scientifically recognized principles and procedures.

**Labelling**

Labelling should be clear and informative as to how the feed and feed ingredients should be handled, stored and used and should comply with regulatory requirements.

See Codex Code of practice on good animal feeding (CAC/RCP 54-2004).

**Design and management of inspection programmes**

In meeting animal and public health objectives prescribed in national legislation or required by importing countries, Competent Authorities contribute through the direct performance of some tasks or through the auditing of animal and public health activities conducted by other agencies or the private sector.

Feed and feed ingredients business operators and other relevant parts of industry should practice self-regulation to secure compliance with required standards for procurement, handling, storage, processing, distribution and use. Operators have the primary responsibility for implementing systems for process control. Where such systems are applied, the Competent Authority should verify that they achieve all regulatory requirements.

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<sup>6</sup> Hazard Analysis and Critical Control Point, as defined in the Annex to the Recommended International Code of Practice on General Principles of Food Hygiene (CAC/RCP 1-1969).

Appendix XLVIII (cond)**Assurance and certification**

*Competent Authorities* are responsible for providing assurances domestically and to trading partners that regulatory requirements have been met. For international trade in animal product based feeds, *Veterinary Services* are required to provide international veterinary certificates.

**Hazards associated with animal feed**Biological hazards

Biological hazards that may occur in feed and feed ingredients include agents such as bacteria, viruses, prions, fungi and parasites.

Chemical hazards

Chemical hazards that may occur in feed and feed ingredients include naturally occurring chemicals (such as mycotoxins and gossypol), industrial and environmental contaminants (such as dioxins and PCBs), residues of veterinary drugs and pesticides and also radionuclides.

Physical hazards

Physical hazards that may occur in feed and feed ingredients include foreign objects (such as pieces of glass, metal, plastic or wood).

**Cross contamination**

It is important to avoid cross-contamination during the manufacture, storage, distribution (including transport) and use of feed and feed ingredients and relevant provisions should be included in the regulatory framework. Scientific evidence, including the sensitivity of analytical methods and on the characterisation of risks, should be drawn upon in developing this framework.

Procedures, such as flushing, sequencing and physical clean-out, should be used to avoid cross-contamination between batches of feed or feed ingredients.

**Antimicrobial resistance**

Concerning the use of antimicrobials in animal feed refer to Section 3.9. of the OIE *Terrestrial Code*.

**Management of information**

The Competent Authority should establish clear requirements for the provision of information by the private sector as this relates to regulatory requirements.

Records should be maintained in a readily accessible form regarding the production, distribution and use of feed and feed ingredients. These records are required to facilitate the prompt trace-back of feed and feed ingredients to the immediate previous source, and trace-forward to the next subsequent recipients, to address identified animal health or public health concerns.

*Animal identification* and *animal traceability* are tools for addressing animal health (including zoonoses), and food safety risks arising from animal feed (see Section 3.5. of the OIE *Terrestrial Code*; Section 4.3. of CAC/RCP 54-2004).