Annex 33

CHAPTER 12.1.

AFRICAN HORSE SICKNESS

Article 12.1.1.

EU comments

The EU thanks the OIE for this update of the African Horse Sickness chapter. The EU can support in general the modifications proposed, but still has comments. The EU wishes to reiterate that there is a need for a field assessment on the practical management of vector protected establishments in order to ensure their effectiveness.

General provisions

For the purposes of the *Terrestrial Code*, the *infective period* for African horse sickness virus (AHSV) shall be 40 days for domestic horses. Although critical information is lacking for some species, this chapter applies to all equidae.

All countries or *zones* ~~neighbouring~~ adjacent to~~, or considered to be 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 ~~Chapter 1.4.~~ Article 12.1.11. to 12.1.13.

The following defines a *case* of African horse sickness (AHS):

1. AHSV has been isolated and identified from an equid or a product derived from that equid; or

2. viral antigen or viral RNA specific to one or more of the serotypes of AHSV has been identified in samples from one or more equids showing clinical signs consistent with AHS, or epidemiologically linked to a suspected or confirmed *case*; or

3. serological evidence of active infection with AHSV by detection of seroconversion with production of antibodies to structural or nonstructural proteins of AHSV that are not a consequence of vaccination have been identified in one or more equids that either show clinical signs consistent with AHS, or epidemiologically linked to a suspected or confirmed *case.*

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

Article 12.1.2.

AHSV free country or zone

1. A country or *zone* may be considered free from AHSV when African horse sickness (AHS) is notifiable in the whole country, systematic vaccination is prohibited, importation of equidae and their semen, oocytes or embryos are carried out in accordance with this chapter, and either:

   a) historical freedom as described in Chapter 1.4. has demonstrated no evidence of AHSV in the country or *zone*; or

   b) the country or *zone* has not reported any *case* of AHS for at least 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 and includes a complete season of *vector* activity; or

d) the country or *zone* has not reported any *case* of AHS for at least 40 days and a *surveillance* programme has demonstrated no evidence of *Culicoides* ~~likely to be competent AHSV *vectors*~~ for at least 2 years in the country or *zone*.

2. An AHS free country or *zone* adjacent to an infected country or *infected zone* should include a *zone* in which *surveillance* is conducted in accordance with Articles 12.1.11. to 12.1.13. *Animals* within this *zone* should be subjected to continuing *surveillance*. The boundaries of this *zone* should be clearly defined, and should take account of geographical and epidemiological factors that are relevant to AHS transmission.

~~2~~3. An AHSV free country or *zone* will not lose its free status through the importation of vaccinated or seropositive equidae and their semen, oocytes or embryos from infected countries or *infected zones*, provided these imports are carried out in accordance with this chapter.

4. To qualify for inclusion in the existing list of AHSV free countries or *zones*, a Member should:

a) have a record of regular and prompt animal disease reporting;

b) send a declaration to the OIE stating:

i) the section under paragraph 1 on ~~the base of~~ which the application is based~~made~~;

ii) no systematic vaccination against AHS has been carried out during the past 12 months in the country or *zone*;

iii) equidae are imported in accordance with paragraph 3 above;

c. supply documented evidence that:

i) *surveillance* ~~for both AHS and AHSV infection~~ in accordance with Articles 12.1.11. to 12.1.13 is ~~in operation~~ applied;

ii) regulatory measures for the early detection, prevention and control of AHS have been implemented.

5. The Member will be included in the list only after the submitted evidence has been accepted by the OIE. Retention on the list requires that the information in points 4b)ii) and iii) and 4c) above be re-submitted annually and changes in the epidemiological situation or other significant events should be reported to the OIE according to the requirements in Chapter 1.1., and in particular, formally state that :

~~1~~a). there has been no *outbreak* of AHS during the past 12 months in the country or *zone*;

~~2~~b) no evidence of AHSV infection has been found during the past 12 months in the country or *zone*.

EU comment

In points 4 and 5, it is not clear whether currently free countries have to send out to the OIE information concerning their AHS status. If this is the case, this will mean an administrative burden with not much added value. Moreover, to resubmit information every year in this regard may be not very useful.

It may be helpful in cases where infected countries are to regain the free status.

Article 12.1.3.

AHSV seasonally free zone

1. An AHSV seasonally free *zone* is a part of an infected country or an *infected zone* in which for part of a year, ongoing *surveillance* and monitoring consistently demonstrated neither evidence of AHSV transmission nor the evidence of the presence of adult *Culicoides* ~~likely to be competent AHSV *vectors*~~.

2. AHS is notifiable in the whole country.

~~2~~3. For the application of Articles 12.1.6., 12.1.8. and 12.1.9., the seasonally free period is:

a) taken to commence the day following the last evidence of AHSV transmission and of the cessation of activity of adult *Culicoides* ~~likely to be competent AHSV *vectors*~~ as demonstrated by an ongoing *surveillance* programme, and

b) taken to conclude either:

i) at least 40 days before the earliest date that historical data show AHSV activity has recommenced; or

ii) immediately when current climatic data or data from a *surveillance* and monitoring programme indicate an earlier resurgence of activity of adult *Culicoides* ~~likely to be competent AHSV~~ *vectors*.

~~3~~4. An AHSV seasonally free *zone* will not lose its free status through the importation of vaccinated or seropositive equidae and their semen, oocytes or embryos from infected countries or *infected zones*, provided these imports are carried out in accordance with this chapter.

Article 12.1.4.

AHSV infected country or zone

For the purpose of this chapter, a~~A~~n AHSV infected country or ~~*infected*~~ *zone* is one that does not fulfil the requirements to qualify as either AHSV free country or *zone* or AHSV seasonally free *zone* ~~in which the conditions of Article 12.1.2. or Article 12.1.3. do not apply~~.

Article 12.1.4.bis.

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

In the event of limited *outbreaks* within an AHS free country or *zone*, including within a *protection zone*, a single *containment zone*, which includes all *cases*~~,~~ and should be large enough to contain any potentially infected vectors, can be established for the purpose of minimizing the impact on the entire country or *zone*. For this to be achieved, the *Veterinary Authority* should provide documented evidence that:

1. the *outbreaks* are limited based on the following factors:

a) immediately on suspicion, a rapid response including notification has been made;

b) standstill of movements of equidae has been imposed, and effective controls on the movement of equidae and their products ~~mentioned~~ specified in this chapter are in place;

c) epidemiological investigation (trace-back, trace-forward) has been completed;

d) the *infection* has been confirmed;

e) the primary *outbreak* and likely source of the *outbreak* has been identified;

f) all *cases* have been shown to be epidemiologically linked;

g) no new *cases* have been found in the *containment zone* within a minimum of two *infectious periods* as defined in Article 12.1.1.;

2. the equidae within the *containment zone* should be clearly identifiable as belonging to the *containment zone*;

3. increased passive and targeted *surveillance* in accordance with Articles 12.1.11. to 12.1.13. ~~has increased~~ in the rest of the country or *zone* ~~and~~ has not detected any evidence of *infection*.

4. animal health measures that effectively prevent the spread of AHS to the rest of the country or *zone*, taking into consideration the establishment of a *protection zone* within the *containment zone*, the seasonal vector conditions and existing physical, geographical and ecological barriers;

5. ongoing *surveillance* is in place in the *containment zone*;

EU comment

The EU wishes to reiterate its former comment: the surveillance should include vectors:

"5. ongoing *surveillance*, including *vectors*, is in place in the *containment zone*."

The free status of the areas outside the *containment zone* is suspended pending the establishment of the *containment zone* in accordance with points 1 to 5 above. The free status of the areas outside the *containment zone* could be reinstated irrespective of the provisions of Article 12.1.4.tris, once the *containment zone* is recognised by the OIE.

The recovery of the AHS free status of the *containment zone* should follow the provisions of Article 12.1.4.tris.

Article 12.1.4.tris.

Recovery of free status

When an AHS *outbreak* occurs in an AHS free country or *zone*, the following provisions apply ~~waiting period required~~ to regain the status of AHS free country or *zone*:

1. If emergency vaccination is not carried out, the conditions of Article 12.1.2. paragraph 1b), 1c) or 1d) apply; or

2. if emergency vaccination is carried out, a waiting period of 24 months after the last *case* and completion of the emergency vaccination has elapsed, during which *surveillance* applied in accordance with Articles 12.1.11. to 12.1.13. has shown no evidence of AHSV infection.

EU comment

Point 1:

There is a reference to point 1d) of Article 12.1.2, which refers to the absence of *Culicoides* in the last two years. The question is: how this area would have detected an AHS outbreak in the absence of vectors for 2 years?

Point 2

For the sake of consistency with point 4 b ii) of article 12.1.2 the waiting period before which the vaccination programme should have elapsed should be 12 months instead of the 24 months proposed in this point 2.

Article 12.1.5.

Recommendations for importation from AHSV free countries ~~that are neither neighbouring nor considered to be at risk from an AHSV infected country~~ or ~~infected~~ zones

for equidae

EU comment (linguistic)

It should be "for equids".

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

1. showed no clinical sign of AHS on the day of shipment;
2. have not been vaccinated against AHS within the last 40 days;
3. were kept in an AHSV free country or *zone* since birth or for at least 40 days prior to shipment;
4. either:
   a) did not transit through an *infected* ~~country or~~ ~~*infected*~~ *zone* during transportation to the *place of shipment*; or
   b) were protected from attacks ~~by~~ from *Culicoides* at all times when transiting through an *infected* ~~country or *infected*~~ *zone*.

Article 12.1.6.

Recommendations for importation from ~~AHSV free countries or free zones or from~~ AHSV seasonally free zones ~~(~~during the seasonally free period~~)~~ ~~that are neighbouring or are considered to be at risk from an AHSV infected country or infected zone~~

for equidae

EU comment (linguistic)

It should be "for equids".

Veterinary Authorities should require 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. and either
   a. 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; or
   4b. ~~in a country or *zone* considered to be at risk~~, were held in ~~quarantine~~ isolation in a *vector-protected establishment* ~~for at least 40 days~~ prior to shipment ~~and protected at all times from attacks by *Culicoides*;~~ ~~and~~

~~a~~i. for a period of at least 28 days and a serological test according to the *Terrestrial Manual* to detect antibodies to the AHSV group, was carried out with a negative result on a blood sample collected at least 28 days after introduction into the *quarantine station*; or

~~b~~ii. for a period of at least 40 days and serological tests according to the *Terrestrial Manual* to detect antibodies against AHSV were carried out with no significant increase in antibody titre on blood samples collected on two occasions, with an interval of not less than 21 days, the first sample being collected at least 7 days after introduction into the *quarantine station*; or

EU comment

The words "*quarantine station*" in points i. and ii. above should be replaced by "*vector* protected *establishment*".

~~c~~iii. for a period of at least 14 days and an agent identification tests according to the *Terrestrial Manual* ~~were~~ was carried out with a negative results on a 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 *vector*-protected *establishment* ~~quarantine station~~;

~~5~~4. were protected from attacks ~~by~~ from *Culicoides* at all times ~~during transportation (including to and at the *place of shipment*)~~ when transiting through an *infected zone*.

Article 12.1.7.

Recommendations for importation from AHSV infected countries or zones

for equidae

EU comment (linguistic)

It should be "for equids".

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

1. showed no clinical sign of AHS on the day of shipment;

2. have not been vaccinated against AHS within the last 40 days;

3. were held ~~continuously during the quarantine period of al least 40 days,~~ in isolation in a *vector*-~~proof~~ protected *establishment* ~~*quarantine station* and protected at all times from attacks by *Culicoides*~~; ~~and~~

   a) for a period of at least 28 days and a serological test according to the *Terrestrial Manual* to detect antibodies to the AHSV group, was carried out with a negative result on a blood sample collected at least 28 days after introduction into the *vector*-protected *establishment* ~~*quarantine station*~~; or

   b) for a period of at least 40 days and serological tests according to the *Terrestrial Manual* to detect antibodies against AHSV were carried out with no significant increase in antibody titre on blood samples collected on two occasions, with an interval of not less than 21 days, the first sample being collected at least 7 days after introduction into the *vector*-protected *establishment* ~~*quarantine station*~~; or

   c) for a period of at least 14 days and an agent identification tests according to the *Terrestrial Manual* ~~were~~ was carried out with a negative results on a 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 *vector*-protected *establishment* ~~*quarantine station*~~;

EU comment

Appropriate vaccination provides a good immunity and could be used as a risk management tool.

There should be a point d) stating:

"d) for a period of at least 40 days and were vaccinated, at least 40 days before shipment, in accordance with the *Terrestrial Manual* against all serotypes whose presence in the source population has been demonstrated through a *surveillance* programme in accordance with Articles 12.1.12 and 12.1.13, and were identified in the accompanying certification as having been vaccinated;"

4. were protected from attacks by *Culicoides* at all times during transportation (including transportation to and at the *place of shipment*).

Article 12.1.8.

Recommendations for the importation of equid semen

EU comment (linguistic)

It should be "of equine semen".

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

1. showed no clinical sign of AHS on the day of collection of the semen and for the following 40 days;

2. had not been immunised against AHS with a live attenuated vaccine within 40 days prior to the day of collection;

3. were either:

   a) kept in an AHSV free country or free *zone* or from an AHSV seasonally free *zone* (during the seasonally free period) for at least 40 days before commencement of, and during collection of the semen, or

   b) kept in an AHSV free vector~~-proof~~ protected *artificial insemination centre* throughout the collection period, and subjected to either:

      i) a serological test according to the *Terrestrial Manual* to detect antibody to the AHSV group, carried out with a negative result on a blood sample collected at least 28 days and not more than 90 days after the last collection of semen; or

      ii) agent identification tests according to the *Terrestrial Manual* carried out with negative results on blood samples collected at commencement and conclusion of, and at least every 7 days, during semen collection for this consignment.

Article 12.1.9.

Recommendations for the importation of *in vivo* derived equid embryos/oocytes

EU comment (linguistic)

It should be " equine embryos".

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

1. the donor animals:

   a) showed no clinical sign of AHS on the day of collection of the embryos/oocytes and for the following 40 days;

   b) had not been immunised against AHS with a live attenuated vaccine within 40 days prior to the day of collection;

   c) were either:

      i) kept in an AHSV free country or free *zone* or from an AHSV seasonally free *zone* (during the seasonally free period) for at least 40 days before commencement of, and during collection of the embryos/oocytes, or

      ii) kept in an AHSV free vector~~-proof~~ protected *collection centre* throughout the collection period, and subjected to either:

         - a serological test according to the *Terrestrial Manual* to detect antibody to the AHSV group carried out with a negative result on a blood sample collected at least 28 days and not more than 90 days after the last collection of embryos/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 7 days during embryos/oocytes collection for this consignment;

2. the embryos were collected, processed and stored in conformity with the provisions of Chapter 4.7. or Chapter 4.9., as relevant;

3. semen used to fertilize the oocytes, complies at least with the requirements in Article 12.1.8.

Article 12.1.10.

Protecting animals from *Culicoides* attack

1. Vector-protected establishment or facility

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

a) Appropriate physical barriers at entry and exit points, for example double-door entry-exit system;

b) openings of the building are *vector* screened with mesh of appropriate gauge ~~aperture size (under study)~~ impregnated regularly with an approved insecticide according to manufacturers' instruction;

c) *vector surveillance* and control within and around the building;

d) measures to limit breeding sites for *vectors* in vicinity of the *establishment* or facility;

e) Standard Operating Procedure, including description of back-up and alarm systems, for operation of the *establishment* or facility and transport of horses to the place of *loading*.

2. During transportation

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

a) Transport by road:

Potential *risk management* strategies include a combination of:

~~1~~i. treating animals with chemical repellents prior to and during transportation, in sanitized *vehicles* treated with appropriate residual contact insecticide;

~~2~~ii. *loading*, transporting and *unloading* animals at times of low *vector* activity (i.e. bright sunshine and low temperature);

~~3~~iii. ensuring *vehicles* do not stop en route during dawn or dusk, or overnight, unless the animals are held behind insect proof netting;

~~4~~iv. darkening the interior of the *vehicle*, for example by covering the roof and/or sides of *vehicles* with shade cloth;

~~5~~v. monitoring for *vectors* at common stopping and offloading points to gain information on seasonal variations;

~~6~~vi. using historical, ongoing and/or AHS modelling information to identify low risk ports and transport routes.

b) Transport by air:

Prior to *loading* the equids, the crates, *containers* or jetstalls are sprayed with an insecticide approved in the country of dispatch.

Crates, *containers* or jet stalls in which equidae are being transported and the cargo hold of the aircraft must be sprayed with an approved insecticide just after the doors to the aircraft are closed and prior to takeoff, or immediately prior to the closing of the aircraft doors after loading.

In addition, during any stop over in countries or *zones* not free of AHS, prior to, or immediately after the opening of any aircraft door and until all doors are closed ~~prior to takeoff~~, netting of appropriate ~~aperture~~ gauge ~~size~~ ~~(under study)~~ impregnated with an approved insecticide must be placed over all crates, *containers* or jetstalls.

Article 12.1.11.

Surveillance: introduction

Articles 12.1.11. to 12.1.13. define the principles and provide ~~a guide~~ guidance on ~~the~~ *surveillance* for AHS, complementary to Chapter~~s~~ 1.4. and, for *vectors*, complementary to Chapter 1.5., ~~applicable to Members seeking to determine their AHSV status. This may be for the entire country or *zone*. Guidance for Members seeking free status following an *outbreak* and for the maintenance of AHS status is 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.

According to this chapter, a Member demonstrating freedom from AHSV infection for the entire country or a *zone* should provide evidence for the existence of an effective *surveillance* programme. The strategy and design of the *surveillance* programme will depend on the prevailing epidemiological circumstances and

should be planned and implemented according to general conditions and methods described in this chapter. This requires the support of a *laboratory* able to undertake identification of AHSV infection through the virus detection and antibody tests described in the *Terrestrial Manual*.

Susceptible captive wild, feral and wild equid populations should be included in the *surveillance* programme.

For the purposes of *surveillance*, a *case* refers to an equid infected with AHSV.

The purpose of *surveillance* is to determine if a country or *zone* is free from AHSV or if a *zone* is seasonally free from AHSV. *Surveillance* deals not only with the occurrence of clinical signs caused by AHSV, but also with evidence of infection with AHSV in the absence of clinical signs.

~~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~~

~~3. serological evidence of active infection with AHSV by detection of seroconversion with production of antibodies to structural or nonstructural proteins of AHSV that are not a consequence of vaccination have been identified in one or more equids that either show clinical signs consistent with AHS, or epidemiologically linked to a suspected *case*.~~

Article 12.1.12.

Surveillance: general conditions and methods

1. A *surveillance* system should be under the responsibility of the *Veterinary Authority*. In particular the following should be in place:

   a) a formal and ongoing system for detecting and investigating *outbreaks* of *disease*;

   b) a procedure for the rapid collection and transport of samples from suspect *cases* of AHS to a *laboratory* for AHS diagnosis as described in the *Terrestrial Manual*;

   c) a system for recording, managing and analysing diagnostic, 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 a *laboratory*. This requires that sampling kits and other equipment are available for those responsible for *surveillance*;

   b) conduct random or targeted serological and virological *surveillance* appropriate to the *infection* status of the country or *zone* in accordance with Chapter 1.4.

Article 12.1.13.

Surveillance strategies

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

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

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

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

For random surveys, the design of the sampling strategy will need to incorporate epidemiologically appropriate design prevalence. The sample size selected for testing will need to be large enough to detect *infection* if it were to occur at a predetermined minimum rate. The sample size, expected prevalence and diagnostic sensitivity of the tests determine the level of confidence in the results of the survey. The Member must justify the choice of design prevalence and confidence level based on the objectives of *surveillance* and the epidemiological situation, in accordance with Chapter 1.4. Selection of the design prevalence, in particular, 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 an important tool to confirm absence of AHSV transmission in a country or *zone*. The species tested should reflect the local epidemiology of AHSV

infection, and the equine species available. Management variables that may reduce the likelihood of *infection*, such as the use of insecticides and animal housing, should be taken into account when selecting equids to be included in the *surveillance* system.

Samples should be examined for antibodies against AHSV using tests prescribed in the *Terrestrial Manual*. Positive AHSV antibody tests results can have four possible causes:

a) natural *infection* with AHSV;

b) vaccination against AHSV;

c) maternal antibodies;

d) positive results due to the lack of specificity of the test.

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

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

Serological *surveillance* in a free *zone* should target those areas that are at highest risk of AHSV transmission, based on the results of previous *surveillance* and other information. This will usually be towards the boundaries of the free *zone*. In view of the epidemiology of AHSV, either random or targeted sampling is suitable to select *herds* 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 *infected zone*, based upon geography, climate, history of *infection* and other relevant factors. The *surveillance* should be carried out over a distance of at least 100 kilometres from the border with that country or *zone*, but a lesser distance could be acceptable if there are relevant ecological or geographical features likely to interrupt the transmission of AHSV. An AHSV free country or *zone* may be protected from an adjacent infected country or *infected zone* by a *protection zone*.

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

3. Virological surveillance

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

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

a) to identify virus circulation in at risk populations;

b) to confirm clinically suspect *cases*;

c) to follow up positive serological results;

d) to better characterize the genotype of circulating virus in a country or *zone*.

4. Sentinel animals

Sentinel animals are a form of targeted *surveillance* with a prospective study design. They comprise groups of unexposed equids that are not vaccinated and are managed at fixed locations and observed and sampled regularly to detect new AHSV infections.

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

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

Care is necessary in choosing the sites for the sentinel groups. The aim is to maximise the chance of detecting AHSV activity at the geographical location for which the sentinel site acts as a sampling point. The effect of secondary factors that may influence events at each location, such as climate, may also be analysed. To avoid confounding factors sentinel groups should comprise animals selected to be of similar age and susceptibility to AHSV infection. The only feature distinguishing groups of sentinels should be their geographical location. Sera from sentinel animal programmes should be stored methodically in a serum bank to allow retrospective studies to be conducted in the event of new serotypes being isolated.

The frequency of sampling should reflect the 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.

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.

Annex 33 (contd)

CHAPTER 1.6.

~~STATUS FOR OIE LISTED DISEASES:~~ PROCEDURES FOR SELF DECLARATION AND FOR OFFICIAL RECOGNITION BY THE OIE

Article 1.6.6.

Questionnaire on African horse sickness

AHS FREE COUNTRY

Report of a Member which applies for recognition of status, under Chapter 12.1. of the *Terrestrial Animal Health Code* (2010), as a AHS free country

Please address concisely the following topics. National legislation, regulations and Veterinary Administration directives may be referred to and annexed as appropriate in one of the OIE official languages.

1. Introduction

   a. Geographical factors. Provide a general description of the country including physical, geographical and other factors that are relevant to AHS introduction. Provide a map identifying the factors above.

   b. Equine sectors. Provide a general description of the equine sector and their relative economic importance in the country. Outline any recent significant changes observed within the sector grouping(s) (if relevant documents are available, please attach).

      i. Sport and race horses

      ii. Breeding stock equidae

      iii. Working and production equidae (including horses for slaughter)

      iv. Leisure equidae

      v. Captive wild, wild and feral equidae.

2. Description of equid population

   a. Demographics of domestic equidae. What is the equidae population by species within the various sectors? Provide a description of the methods of animal identification, holding and individual animal registration systems if in place. How are they distributed (e.g. density, etc.)? Provide tables and maps as appropriate.

   b. Wildlife demographics. What captive wild, wild or feral equidae are present in the country? Provide estimates of population sizes and geographic distribution. ~~What are the measures in place to prevent contact between domestic and captive wild, wild or feral equidae?~~

3. Veterinary system

   a. Legislation. Provide a list and summary of all relevant veterinary legislation in relation to AHS.

   b. Veterinary Services. Provide documentation on the compliance of the *Veterinary Service* of the country with the provisions of Chapters 3.1. and 3.2. of the *Terrestrial Code* and 1.1.3. of the *Terrestrial Manual* and describe how *Veterinary Services* supervise and control all AHS related activities. Provide maps and tables wherever possible.

   c. Role of farmers, keepers, industry, regulatory bodies, and other relevant groups in AHS *surveillance* and control (include a description of training and awareness programmes on AHS).

   d. Role of private veterinary profession in AHS *surveillance* and control.

   e. Provide information on any OIE PVS evaluation of the country and follow-up steps within the PVS pathway

4. AHS eradication

   a. History. Provide a description of the AHS history in the country if applicable, date of first detection, origin of *infection*, date of eradication (date of last *case*), and serotypes present.

   b. Strategy. Describe how AHS was controlled and eradicated (e.g. isolation of cases, *stamping-out policy*, zoning), provide time frame for eradication.

   c. Vaccines and vaccination. What type of vaccine was used? What equine species were vaccinated? Were vaccinated animals marked or was vaccination recorded in a unique identification document?

   d. Legislation, organisation and implementation of the AHS eradication campaign. Provide a description of the organizational structure at the different levels. Indicate if detailed operational guidelines were used and give a brief summary.

   e. Animal identification. Are equidae identified (individually or at a group level)?

   f. Movements of equidae. How are movements of equidae controlled in the country? Provide evidence on the effectiveness of equidae identification and movement controls. Please provide information on pastoralism, transhumance and related movements.

   g. Leisure and competition movements of equidae. How are movements of competition and leisure equidae controlled in the country. Please provide information on systems including any use of registration. Provide information on any events that include international movements of equidae.

   h. Describe the market systems for equidae, in particular, if markets require the international movement of equidae.

5. AHS diagnosis

   Provide documentary evidence that the provisions in Chapters 1.1.2., 1.1.3., and 2.5.1. of the *Terrestrial Manual* are applied. In particular, the following points should be addressed:

   a. Is AHS laboratory diagnosis carried out in the country? If so, provide a list of approved laboratories. If not, provide the name(s) of and the arrangements with the laboratory(ies) samples are sent to, the follow-up procedures and the time frame for obtaining results.

Annex 33 (contd)

b. Provide an overview of the AHS approved laboratories, in particular to address the following points:

i. Details on the types of tests undertaken.

ii. Procedures for the official accreditation of laboratories. Give details of internal quality management systems, e.g. Good Laboratory Practice, ISO that exist in, or planned for, the laboratory system.

iii. Give details of participation in inter-laboratory validation tests (ring tests).

iv. Describe biosecurity measures applied, particularly in the case where live virus is handled.

6. AHS surveillance

Provide documentary evidence that *surveillance* for AHS in the country complies with the provisions of Articles 12.1.11. to 12.1.13. of the *Terrestrial Code*, and Chapter 2.5.1. of the *Terrestrial Manual*. In particular, the following points should be addressed:

a. Clinical suspicion. What are the criteria for raising a suspicion of AHS? What is the procedure to notify (by whom and to whom), is there a compensation system in place and what penalties are involved for failure to report? Provide a summary table indicating, for the past 2 years, the number of suspect *cases*, the number of samples tested for AHS, species, type of sample, testing method(s) and results (including differential diagnosis).

b. Surveillance. Are the following undertaken?

i. Serological surveillance

ii. Virological surveillance

iii. Sentinel animals

iv. Vector surveillance.

If so, provide detailed information on the survey designs. How frequently are they conducted? Which were the equine species included? Are wildlife species included? Provide a summary table indicating detailed results, for at least the past 2 years. Provide details on follow-up actions taken on all suspicious and positive results. Provide criteria for selection of populations for targeted *surveillance* and numbers of equidae examined and samples tested. Provide details on the methods selected and applied for monitoring the performance of the *surveillance* system.

7. AHS prevention

a. Coordination with neighbouring countries. Are there any relevant factors about the adjacent countries or *zones* that have been taken into account (e.g. size, distance from adjacent border to infected equidae)? Describe coordination, collaboration and information sharing activities with neighbouring countries.

If the AHS free country borders an infected country or *zone*, describe the animal health measures implemented to effectively prevent the introduction of the agent and/or *vectors*, taking into consideration the seasonal *vector* conditions and existing physical, geographical and ecological barriers.

b. Import control procedures

From what countries or *zones* does the country authorize the import of equidae or their products? What criteria are applied to approve such countries or *zones*? What controls are applied on entry of such equidae and products, and subsequent internal movement? What import conditions (e.g. quarantine) and test procedures are required? Are import permits and health certificates required? What other procedures are used? Provide summary statistics of imports, temporary admissions or re-entry of equidae and their products for at least the past 2 years, specifying country or *zone* of origin and volume.

i. Provide a map with the number and location of ports, airports and land crossings. Is the service responsible for import controls part of the official services, or is it an independent body? If it is an independent body, describe its management structure, staffing levels and resources, and its accountability to the *Competent Authority*. Describe the communication systems between the *Competent Authority* and the border inspection posts, and between border inspection posts.

ii. Describe the regulations, procedures, type and frequency of checks at the point of entry into the country and/or their final destination, concerning the import and follow-up of the following:

- Equidae,
- genetic material (semen, ova and embryos of the equine species),
- equine derived (by-)products and biological.

iii. Describe the action available under legislation, and actually taken, when an illegal introduction is detected. Provide information on detected illegal introduction.

8. Control measures and contingency planning

a. Give details of any written guidelines, contingency plans (including information on vaccine banks) available to the *Competent Authority* for dealing with suspected or confirmed *cases* of AHS.

b. In the event of a suspected or confirmed AHS *outbreak*:

i. is quarantine imposed on premises with suspicious *cases*, pending final diagnosis?

ii. are movement restrictions applied on suspicion?

iii. describe the sampling and testing procedures used to identify and confirm presence of the causative agent;

iv. describe the actions taken to control the disease situation in and around any holdings found to be infected with AHS;

v. describe the control and/or eradication procedures (e.g. vaccination, modified stamping-out);

vi. describe the procedures used to confirm that an *outbreak* has been successfully controlled/eradicated, including conditions for restocking;

Annex 33 (contd)

vii. give details of any compensation made available when equidae are killed, for *disease* control/eradication purposes.

9. Compliance with the *Terrestrial Code*

a. In addition to the documentary evidence that the provisions of Article 12.1.2 are properly implemented and supervised, the Delegate of the country must submit a declaration stating:

i. The section under paragraph 1 (of Article 12.1.2.) on the base of which the application is made;

ii. there has been no *outbreak* of AHS during the past 12 months;

iii. no systematic vaccination against AHS has been carried out during the past 12 months;

b. and that vaccinated equidae were imported in accordance with Chapter 12.1.

10. Recovery of status

Countries applying for recovery of status should comply with the provisions of Article 12.1.2. of the *Terrestrial Code* and provide detailed information as specified in sections 4(a), b), c and 6, and highlight any measures introduced to prevent a recurrence of the infection under section 7 of this questionnaire. Information in relation to other sections need only be supplied if relevant.

AHS FREE ZONE

Report of a Member which applies for recognition of status, under Chapter 12.1. of the *Terrestrial Animal Health Code* (2010), as a AHS free zone

Please address concisely the following topics. National legislation, regulations and Veterinary Administration directives may be referred to and annexed as appropriate in one of the OIE official languages.

1. Introduction

a. Geographical factors. Provide a general description of the country and the *zone* including physical, geographical and other factors that are relevant to AHS introduction. Provide a map identifying the factors above. The boundaries of the *zone* must be clearly defined, including a *protection zone*, if applied. Provide a digitalised, geo-referenced map with a precise text description of the geographical boundaries of the *zone* (and of the *protection zone*) established in accordance with Chapter 4.3.

b. Equine sectors. Provide a general description of the equine sector and their relative economic importance in the country and the *zone*. Outline any recent significant changes observed within the sector grouping(s) (if relevant documents are available, please attach).

i. Sport and race horses

ii. Breeding stock equidae

iii. Working and production equidae (including horses for slaughter)

iv. Leisure equidae

v. Captive wild, wild and feral equidae.

2. Description of equidae population

a. Demographics of domestic equidae. What is the equidae population by species within the various sectors in the country and the *zone*? Provide a description of the methods of animal identification, holding and individual animal registration systems in the country and the *zone* if in place. How are they distributed (e.g. density, etc.)? Provide tables and maps as appropriate.

b. Wildlife demographics. What captive wild, wild or feral equidae are present in the country and the *zone*? Provide estimates of population sizes and geographic distribution. ~~What are the measures in place to prevent contact between domestic and captive wild, wild or feral equidae?~~

3. Veterinary system

a. Legislation. Provide a list and summary of all relevant veterinary legislation in relation to AHS.

b. Veterinary Services. Provide documentation on the compliance of the *Veterinary Service* of the country with the provisions of Chapters 3.1. and 3.2. of the *Terrestrial Code* and 1.1.3. of the *Terrestrial Manual* and describe how *Veterinary Services* supervise and control all AHS related activities in the country and in the *zone*. Provide maps and tables wherever possible.

c. Role of farmers, keepers, industry, regulatory bodies, and other relevant groups in AHS *surveillance* and control (include a description of training and awareness programmes on AHS).

d. Role of private veterinary profession in AHS *surveillance* and control.

4. AHS eradication

a. History. Provide a description of the AHS history in the country and *zone*, if applicable, date of first detection, origin of *infection*, date of eradication in the *zone* (date of last *case*), and serotypes present.

b. Strategy. Describe how AHS was controlled and eradicated in the *zone* (e.g. isolation of cases, *stamping-out policy*, zoning), provide time frame for eradication.

c. Vaccines and vaccination. What type of vaccine was used in the *zone* and the rest of the country? What equine species were vaccinated? Were vaccinated *animals* marked or was vaccination recorded in a unique identification document?

d. Legislation, organisation and implementation of the AHS eradication campaign. Provide a description of the organizational structure at the different levels. Indicate if detailed operational guidelines were used and give a brief summary.

e. Animal identification. Are equidae identified (individually or at a group level)?

f. Movements of equidae. How are movements of equidae controlled in, and between *zones* of the country? Provide evidence on the effectiveness of equidae identification and movement controls in the *zone*. Please provide information on pastoralism, transhumance and related movements.

Annex 33 (contd)

g. Leisure and competition movements of equidae. How are movements of competition and leisure equidae controlled in the country and the *zones*? Please provide information on systems including any use of registration. Provide information on any events that include international movements of equidae.

h. Describe the market systems for equidae in the country and the *zones*, in particular, if markets require the international movement of equidae.

5. AHS diagnosis

Provide documentary evidence that the provisions in Chapters 1.1.2., 1.1.3., and 2.5.1. of the *Terrestrial Manual* are applied in the country and the *zone*. In particular, the following points should be addressed:

a. Is AHS laboratory diagnosis carried out in the country and the *zone*? If so, provide a list of approved laboratories. If not, provide the name(s) of and the arrangements with the laboratory(ies) samples are sent to, the follow-up procedures and the time frame for obtaining results. Indicate the laboratory(ies) where samples originating from the *zone* are diagnosed.

b. Provide an overview of the AHS approved laboratories, in particular to address the following points:

i. Details on the types of tests undertaken.

ii. Procedures for the official accreditation of laboratories. Give details of internal quality management systems, e.g. Good Laboratory Practice, ISO that exist in, or planned for, the laboratory system.

iii. Give details of participation in inter-laboratory validation tests (ring tests).

iv. Describe biosecurity measures applied, particularly in the case where live virus is handled.

6. AHS surveillance

Provide documentary evidence that *surveillance* for AHS in the *zone* complies with the provisions of Articles 12.1.11. to 12.1.13. of the *Terrestrial Code*, and Chapter 2.5.1. of the *Terrestrial Manual*. In particular, the following points should be addressed:

a. Clinical suspicion. What are the criteria for raising a suspicion of AHS? What is the procedure to notify (by whom and to whom), is there a compensation system in place and what penalties are involved for failure to report? Provide a summary table indicating, for the past 2 years, the number of suspect *cases*, the number of samples tested for AHS, species, type of sample, testing method(s) and results (including differential diagnosis) from the *zone*.

b. Surveillance. Are the following undertaken?

i. Serological surveillance

ii. Virological surveillance

iii. Sentinel animals

iv. Vector surveillance.

If so, provide detailed information on the survey designs. How frequently are they conducted? Which were the equine species included? Are wildlife species included? Provide a summary table indicating detailed results, for at least the past 2 years. Provide details on follow-up actions taken on all suspicious and positive results. Provide criteria for selection of populations for targeted *surveillance* and numbers of equidae examined and samples tested. Provide details on the methods selected and applied for monitoring the performance of the *surveillance* system.

7. AHS prevention

a. Coordination with neighbouring countries. Are there any relevant factors about the adjacent countries and/or *zones* that have been taken into account (e.g. size, distance from adjacent border to infected equidae)? Describe coordination, collaboration and information sharing activities with neighbouring countries and *zones*.

If the AHS free *zone* is established in an AHS infected country or borders an infected country or *infected zones*, describe the animal health measures implemented to effectively prevent the introduction of the agent and/or *vectors*, taking into consideration the seasonal vector conditions and existing physical, geographical and ecological barriers.

b. Import control procedures. From what countries or *zones* does the country authorize the import of equidae or their products into the free *zone*? What criteria are applied to approve such countries or *zones*? What controls are applied on entry of such equidae and products, and subsequent internal movement? What import conditions (e.g. quarantine) and test procedures are required? Are import permits and health certificates required? What other procedures are used? Provide summary statistics of imports, temporary admissions or re-entry of equidae and their products to the free *zone* for at least the past 2 years, specifying country or *zone* of origin and volume.

i. Provide a map with the number and location of ports, airports and land crossings in the *zone*. Is the service responsible for import controls part of the official services, or is it an independent body? If it is an independent body, describe its management structure, staffing levels and resources, and its accountability to the *Competent Authority*. Describe the communication systems between the *Competent Authority* and the border inspection posts, and between border inspection posts.

ii. Describe the regulations, procedures, type and frequency of checks at the points of entry into the *zone* and/or their final destination, concerning the import and follow-up of the following:

- equidae,
- genetic material (semen, ova and embryos of the equine species),
- equine derived (by-)products and biologicals.

iii. Describe the action available under legislation, and actually taken, when an illegal introduction into the *zone* is detected. Provide information on detected illegal introductions into the *zone*.

8. Control measures and contingency planning

a. Give details of any written guidelines, contingency plans (including information on vaccine banks) available to the *Competent Authority* for dealing with suspected or confirmed *cases* of AHS in the country and the *zone* (including the *protection zone* if applicable).

Annex 33 (contd)

b. In the event of a suspected or confirmed AHS *outbreak* in the *zone*:

i. is quarantine imposed on premises with suspicious *cases*, pending final diagnosis?

ii. are movement restrictions applied on suspicion?

iii. describe the sampling and testing procedures used to identify and confirm presence of the causative agent;

iv. describe the actions taken to control the disease situation in and around any holdings found to be infected with AHS;

v. describe the control and/or eradication procedures (e.g. vaccination, modified stamping-out);

vi. describe the procedures used to confirm that an *outbreak* has been successfully controlled/eradicated, including conditions for restocking;

vii. give details of any compensation made available when equidae are killed, for *disease* control/eradication purposes.

9. Compliance with the *Terrestrial Code*

a. In addition to the documentary evidence that the provisions of Article 12.1.2 are properly implemented and supervised, the Delegate of the country must submit a declaration stating:

i. The section under paragraph 1 (of Article 12.1.2.) on the base of which the application is made

ii. there has been no *outbreak* of AHS during the past 12 months in the *zone*;

iii. no systematic vaccination against AHS has been carried out during the past 12 months in the *zone*;

b. and that vaccinated equidae were imported into the *zone* in accordance with Chapter 12.1.

10. Recovery of status

Countries applying for recovery of status should comply with the provisions of Article 12.1.2. of the *Terrestrial Code* and provide detailed information as specified in sections 4 (a), (b), (c) and 6 and highlight any measures introduced to prevent a recurrence of the *infection* under Section 7 of this questionnaire.

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