Annex 16

Chapter 8.y.

**Infection with animal trypanosomes
of African origin**

Article 8.Y.1.

**General provisions**

1) *Infection* with a~~A~~nimal trypanosomes of African origin is a disease complex caused by several protozoan parasites of the genus *Trypanosoma*, transmitted mainly cyclically by the genus *Glossina* (tsetse flies), but also mechanically by several biting flies (*e.g*. tabanids, *Stomoxys* spp). The disease can be caused by many different trypanosomes and can affect various mammals such as horses, donkeys, camels, goats, sheep, pigs, dogs, cats and non-human primates. ~~From the socio-economic point of view~~ The disease ~~is~~ has a ~~particularly~~ significant socio-economic impact ~~deleterious~~ ~~in~~ on ~~cattle~~ animal production. ~~Some trypanosomes of African origin (~~*~~i.e.~~ Trypanosoma brucei gambiense~~,~~* and *T. brucei rhodesiense*~~)~~ can also affect humans and are responsible for a disease known as sleeping sickness or human African trypanosomosis, which is almost always fatal if untreated ~~(sleeping sickness also known as human African trypanosomosis)~~.

2) *Infection* with several trypanosome species in the same animal ~~could exist~~ may occur although ~~they~~ this may not always be detected ~~be evidenced~~ using routine testing methods.

3) For the purposes of this chapter, ‘susceptible animals’ means domestic and *wild* *animals* from the following families: bovidae, suidae, equidae, camelidae, canidae, felidae and non-human primates.

4) For the purposes of the *Terrestrial Code*, *infection* with animal trypanosomes of African origin is defined as an *infection* of susceptibleanimals with one or more salivarian trypanosomes of the ~~subgenus~~ subgenera *Duttonella* (only *T*. *vivax*), *Nannomonas* (only *T*. *congolense* and *T. simiae*) and *Trypanozoon* (*T*. *brucei* ssppexcluding *T. evansi* and *T. equiperdum*), hereafter referred to as ‘pathogenic agent’.

5) *Infections* of susceptible animals with *T. evansi* ~~or~~ and *T. equiperdum* ~~is~~ are covered by Chapter 8.X. and Chapter 12.3., respectively.

6) Other trypanosomes including *T. uniforme*, *T. godfreyi* and *T. suis*, which are rarely reported~~,~~ and of limited distribution and impact, do not play a significant role in the epidemiology of the disease; however, they should be considered in the *surveillance* system ~~due~~ owing to their interference (hidden *infection*) with the diagnosis of *infection* with animal trypanosomes of African origin.

7) The following defines the occurrence of *infection* with animal trypanosomes of African origin:

a) the pathogenic agent has been observed in a sample from a susceptible animal; or

b) ~~presence of~~ genetic material specific to the pathogenic agent has been detected in a sample from a susceptible animal showing clinical signs consistent with *infection* with animal trypanosomes of African origin or which has an epidemiological link to a confirmed *case*; or

c) antibodies have been detected in a sample from a susceptible animal showing clinical signs consistent with *infection* with animal trypanosomes of African originor which has an epidemiological link to a confirmed *case* ~~in any susceptible animal species~~.

8) For the purposes of the *Terrestrial Code,* the *incubation period* of *infection* with animal trypanosomes of African origin ~~in susceptible animals~~ shall be 90 days.

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

Annex 16 (contd)

Article 8.Y.2.

**Safe commodities**

When authorising the import or transit of the following *commodities* from susceptible animals, [*Veterinary Authorities*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_autorite_veterinaire) should not require conditions related to animal trypanosomes of African origin regardless of the status of the [*exporting country*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_pays_exportateur)or *zone*:

1) pasteurised [*milk*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_lait) and pasteurised [*milk products*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_produit_laitier);

2) hair, wool and fibre;

3) gelatine and collagen;

4) horns, hooves and claws;

5) *meat* from animals that have been slaughtered in a *slaughterhouse/abattoir* and have been subjected to ante- and post-mortem inspections with favourable results;

~~5~~6) [*meat products*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_produits_a_base_de_viande);

~~6~~7) hides and skins (except raw);

8) semen collected and processed in accordance with Chapter 4.6.;

9) embryos.

Article 8.Y.3.

**Country or zone free from infection with animal trypanosomes of African origin**

A *country* or *zone* may be considered free from *infection* with animal trypanosomes of African origin when:

1) the *infection* is notifiable in the entire country;

2) measures to prevent the introduction of the *infection* have been in place~~:~~; in particular, the importations or movements of susceptible animals and other *commodities* into the country or *zone* have been carried out in accordance with this chapter and other relevant chapters of the *Terrestrial Code*;

3) and either:

a) the relevant provisions in point 2 of Article 1.4.6. have been complied with; or

b) for at least the past two years, there has been no *case* in the country or *zone* and:

i) [*surveillance*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_surveillance) in accordance with Articles 8.Y.~~13~~7. to 8.Y.~~16~~10. has been in place in the entire country; or

ii) ~~there has been no~~ [*~~case~~*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_cas) ~~of~~ [*~~infection~~*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_infection) ~~with animal trypanosomes of African origin in the country, or~~ *~~zone~~* ~~or~~ *~~compartment~~*~~.; or~~ the absence of competent *vectors* has been demonstrated by a *surveillance* programme in accordance with Chapter 1.5. and Article 8.Y.9.

~~c~~) ~~the absence of competent~~ *~~vectors~~* ~~has been demonstrated by a~~ *~~surveillance~~* ~~programme in accordance with Chapter 1.5. and Article 8.Y.9.~~

A country or *zone* free from *infection* with animal trypanosomes of African origin ~~neighbouring~~ adjacent to an infected country or *zone* should include a *zone* in which *surveillance* is conducted in accordance with Articles 8.Y.~~13~~7. to 8.Y.~~16~~10.

Annex 16 (contd)

Article 8.Y.4.

**Compartment free from infection with animal trypanosomes of African origin**

The establishment and bilateral recognition of a [*compartment*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_compartiment) free from *infection* with animal trypanosomes of African origin should follow the provisions laid down in this chapter and in Chapters [4.4.](http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_zoning_compartment.htm#chapitre_zoning_compartment) and [4.5.](http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_application_compartment.htm#chapitre_application_compartment)

Susceptible animals in the free *compartment* should be protected against the *vectors* by the application of an effective *biosecurity* management system.

Article 8.Y.5.

**Recovery of free status**

Should a *case* of *infection* with animal trypanosomes of African origin occur in a previously free country or [*zone*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_zone_region), its status may be recovered after the following:

1) infected *animals* have been isolated and then immediately treated, slaughtered~~,~~ or killed and appropriately disposed of;

2) *animals* in contact with infected *animals* have been put immediately under *~~vector~~*~~-~~protection from *vector* attacks and tested;

AND

3) ~~and~~ for six consecutive months, either:

a) after the last *case* was slaughtered or killed, the *animals* in contact have undergone monthly repeated serological and agent detection tests with negative results in both tests; or

b) when treatment is applied to the infected *animals*, both treated and in contact *animals* have undergone monthly repeated serological and agent detection tests with negative results in both tests;

AND

4) [*surveillance*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_surveillance) in accordance with Articles 8.Y.13. to 8.Y.16. has been carried out with negative results;

5) appropriate *biosecurity* is in place, ~~that may include~~ including *vector* control or *~~vector~~* protection from *vector* attacks in the affected area.

Otherwise, Article 8.Y.3. applies.

Article 8.Y.6.

**Recommendations for importation of susceptible animals from countries, zones or compartments free from infection with animal trypanosomes of African origin**

~~For susceptible animals~~

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

1) showed no clinical signs of *infection* with animal trypanosomes of African origin on the day of shipment;

2) were kept since birth in a free country, *zone* or *compartment* or were imported from a free country, *zone* or *compartment*;

Annex 16 (contd)

3) did not transit through an *infected* *zone* during transportation to the *place of shipment* or were protected from *vectors* or any source of animal trypanosomes of African origin by the application of effective *biosecurity* during transportation to the *place of shipment*.

~~Article 8.Y.7.~~

**~~Recommendations for importation from countries, zones or compartments free from infection with animal trypanosomes of African origin~~**

~~For semen~~

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

~~1)~~ ~~the donor males:~~

~~a)~~ ~~were kept since birth in a free country,~~ *~~zone~~* ~~or~~ *~~compartment~~* ~~or were imported from a free country,~~ *~~zone~~* ~~or~~ *~~compartment~~*~~;~~

~~b)~~~~showed no clinical signs of~~ *~~infection~~* ~~with animal trypanosomes of African origin on the day of collection;~~

~~2)~~ ~~the semen was collected, processed and stored in accordance with Chapters~~ [~~4.6.~~](http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_general_hygiene_semen.htm#chapitre_general_hygiene_semen) ~~and~~ [~~4.7.~~](http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_coll_semen.htm#chapitre_coll_semen)

~~Article 8.Y.8.~~

**~~Recommendations for importation from countries or zones infected with animal trypanosomes of African origin~~**

~~For semen~~

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

~~1)~~ ~~the donor males:~~

~~a)~~ ~~were kept in isolation in a~~ *~~vector~~*~~-protected~~ *~~artificial insemination centre~~* ~~for at least 90 days prior to semen collection;~~

~~b)~~ ~~were subjected, with negative results, to an agent identification test and an ELISA test for antibody detection adapted to the epidemiological situation on samples collected at entrance of the~~ *~~vector~~*~~-protected~~ *~~artificial insemination centre~~* ~~and at least 90 days after the first test;~~

~~c)~~ ~~showed no clinical signs of~~ *~~infection~~* ~~with animal trypanosomes of African origin during the isolation period and on the day of collection;~~

~~2)~~ ~~the semen was collected, processed and stored in accordance with Chapters~~ [~~4.6.~~](http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_general_hygiene_semen.htm#chapitre_general_hygiene_semen) ~~and~~ [~~4.7.~~](http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_coll_semen.htm#chapitre_coll_semen)

~~Article 8.Y.9.~~

**~~Recommendations for importation from countries, zones or compartments free from infection with animal trypanosomes of African origin~~**

~~For~~ *~~in vivo~~* ~~derived embryos and for~~ *~~in vitro~~* ~~produced embryos~~

[*~~Veterinary Authorities~~*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_autorite_veterinaire) ~~should require the presentation of an~~ [*~~international veterinary certificate~~*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_certificat_veterinaire_international)~~attesting that:~~

~~1)~~ ~~the donor females:~~

~~a)~~ ~~were kept since birth in a free country,~~ *~~zone~~* ~~or~~ *~~compartment~~* ~~or were imported from a free country,~~ *~~zone~~* ~~or~~ *~~compartment~~*~~;~~

~~b)~~ ~~showed no clinical signs of~~ *~~infection~~* ~~with animal trypanosomes of African origin on the day of collection;~~

Annex 16 (contd)

~~2)~~ ~~the semen used for the production of embryos complied with the provisions of Article~~ [~~8.Y.7.~~](http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_prrs.htm#article_prrs.8.)~~or Article 8.Y.8.;~~

~~3)~~ ~~the embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant.~~

~~Article 8.Y.10.~~

**~~Recommendations for importation from countries or zones infected with animal trypanosomes of African origin~~**

~~For~~ *~~in vivo~~* ~~derived embryos and for~~ *~~in vitro~~* ~~produced embryos~~

[*~~Veterinary Authorities~~*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_autorite_veterinaire)~~should require the presentation of an~~[*~~international veterinary certificate~~*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_certificat_veterinaire_international)~~attesting that:~~

~~1)~~ ~~the donor females:~~

~~a)~~ ~~were kept in isolation in a~~ *~~vector~~*~~-protected~~ *~~collection centre~~* ~~for at least 90 days prior to the collection;~~

~~b)~~ ~~were subjected, with negative results, to an agent identification test and an ELISA test for antibody detection adapted to the epidemiological situation on samples collected at entrance to the~~ *~~vector~~*~~-protected~~ *~~collection centre~~* ~~and at least 90 days after the first test;~~

~~c)~~ ~~showed no clinical signs of~~ *~~infection~~* ~~with animal trypanosomes of African origin on the day of collection;~~

~~2)~~ ~~the semen used for the production of embryos complied with the provisions of Article~~ [~~8.Y.7.~~](http://www.oie.int/index.php?id=169&L=0&htmfile=chapitre_prrs.htm#article_prrs.8.)~~or Article 8.Y.8.;~~

~~3)~~ ~~the embryos were collected, processed and stored in accordance with Chapters 4.8., 4.9. and 4.10., as relevant.~~

~~Article 8.Y.11.~~

**~~Recommendations for importation from countries, zones or compartments free from infection with animal trypanosomes of African origin~~**

~~For meat~~

[*~~Veterinary Authorities~~*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_autorite_veterinaire)~~should require the presentation of an~~ *~~international veterinary certificate~~* ~~attesting that the entire consignment of~~ [*~~meat~~*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_viandes) ~~comes from~~ *~~animals~~* ~~which:~~

~~1)~~ ~~were kept since birth in a free country,~~ *~~zone~~* ~~or~~ *~~compartment~~* ~~or were imported from a free country,~~ *~~zone~~* ~~or~~ *~~compartment~~*~~;~~

~~2)~~ ~~have been slaughtered in a~~ [*~~slaughterhouse/abattoir~~*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_abattoir) ~~and have been subjected to ante- and post-mortem inspections with favourable results.~~

~~Article 8.Y.12.~~

**~~Recommendations for importation from countries or zones infected with animal trypanosomes of African origin~~**

~~For meat~~

[*~~Veterinary Authorities~~*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_autorite_veterinaire) ~~should require the presentation of an~~ [*~~international veterinary certificate~~*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_certificat_veterinaire_international) ~~attesting that the entire consignment of~~ [*~~meat~~*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_viandes)~~:~~

~~1)~~ ~~comes from~~ *~~animals~~* ~~which have been slaughtered in a~~ [*~~slaughterhouse/abattoir~~*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_abattoir) ~~and have been subjected to ante- and post-mortem inspections with favourable results; and~~

~~2)~~ ~~either:~~

~~a)~~ ~~has been kept at a temperature lower than + 4°C for a minimum period of five days; or~~

Annex 16 (contd)

~~b)~~ ~~has been subjected to any procedure of equivalent efficacy recognised by the~~ *~~Veterinary Authority~~*~~.~~

Article 8.Y.~~13~~7.

**Introduction to surveillance**

Articles 8.Y.~~13~~7. to 8.Y.~~16~~10. define the principles and provide guidance on *surveillance* for *infection* with animal trypanosomes of African origin, complementary to Chapter 1.4. and to Chapter 1.5.

The purposes of *surveillance* could be the demonstration of the absence of *infection*, the early detection of *cases*, or the measurement and monitoring of the *prevalence* and distribution of the *infection* in a country, *zone* or *compartment*.

*Vectors* are an essential component of the epidemiology of animal trypanosomes of African origin. Therefore, the *surveillance* system should include a *vector surveillance* component to detect the presence and ~~the~~ estimate the abundance of tsetse flies. When appropriate, it should also allow ~~the~~ estimation of the *vector* *infection* rate with animal trypanosomes of African origin. *Vector surveillance* may also ~~aim~~ assist with ~~the~~ estimation of the abundance of mechanical *vectors* ~~abundance~~.

The impact and epidemiology of animal trypanosomes of African origin widely differs between different regions of the world and therefore, it is not appropriate to provide specific recommendations for all situations. Member Countries should provide scientific data explaining the epidemiology of the disease in the ~~concerned~~ country or *zone* concerned and adapt the *surveillance* strategies for defining their status to the local conditions. There is considerable latitude available to Member Countries to justify their status at an acceptable level of confidence.

Although *surveillance* in *wildlife* presents challenges that may differ significantly from those in domestic *animals*, *~~W~~wildlife* should be considered in the *surveillance* system because they can serve as reservoirs of *infection* and as indicators of *risk* to humans and domestic *animals*.*~~Surveillance~~* ~~in~~ *~~wildlife~~* ~~presents challenges that may differ significantly from those in domestic~~ *~~animals~~*~~.~~

Article 8.Y.~~14~~8.

**General conditions and methods for surveillance**

1) A *surveillance* system in accordance with Chapter 1.4. should be under the responsibility of the *Veterinary Authority*. In particular, it should include:

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

b) a procedure for the rapid diagnosis in the field or for the collection and transport of samples from suspected *cases* to a *laboratory* for diagnosis;

c) a system for recording, managing, reporting and analysing diagnostic and *surveillance* data.

2) The *surveillance* programme for animal trypanosomes of African origin should, at least:

a) in a free country or~~,~~ *zone* ~~or~~ *~~compartment~~*, have an *early warning system* which obliges ~~farmers~~ animal owners and keepers and other stakeholders who have regular contact with susceptible animals ~~and workers, who have regular contact with susceptible animals~~, as well as *veterinarians* or *veterinary paraprofessionals*~~diagnosticians~~, to report promptly any suspicion of animal trypanosomes of African origin to the *Veterinary Authority*.

An effective *surveillance* system will periodically identify suspected *cases* that require follow-up and investigation to confirm or exclude whether the cause of the condition is animal trypanosomes of African origin. The rate at which such suspected *cases* are likely to occur will differ between epidemiological situations and cannot therefore be reliably predicted ~~reliably~~. All suspected *cases* should be investigated immediately, and samples should be taken and submitted to a *laboratory*;

b) include ~~the conduct of~~ random or targeted serological or parasitological surveys *~~surveillance~~* appropriate to the status of the country or *zon**e*.

Annex 16 (contd)

Article 8.Y.~~15~~9.

**Surveillance strategies**

The target population should include domestic and *wild* susceptible animals of epidemiological significance within the country or *zone*. Active and passive *surveillance* for animal trypanosomes of African origin should be ongoing as epidemiologically appropriate. *Surveillance* should be composed of random or targeted approaches using parasitological, serological, clinical and entomological methods appropriate for the status of the country or *zone*.

In a free country or *zone,* it is appropriate to focus *surveillance* in an area ~~neighbouring~~ adjacent to ~~a border of~~ an infected country or *zone*, considering relevant ecological or geographical features likely to interrupt the transmission of animal trypanosomes of African origin.

A Member Country should justify the *surveillance* strategy chosen as being adequate to detect the presence of *infection* with animal trypanosomes of African origin in accordance with Chapter 1.4. and Chapter 1.5., and with the prevailing epidemiological situation.

If a Member Country wishes to declare freedom from *infection* with animal trypanosomes of African origin in a specific *zone*, the design of the *surveillance* strategy should be targeted to the susceptible population within the *zone*.

For random surveys, the sample size selected for testing should be large enough to detect evidence of *infection* if it ~~was~~ were to occur at a predetermined minimum ~~rate~~ expected *prevalence*. The sample size and expected *prevalence* determine the level of confidence in the results of the survey. The Member Country should justify the choice of the minimum expected *prevalence* and confidence level based on the objectives of *surveillance* and the epidemiological situation, in accordance with Chapter 1.4. 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 *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 should be an effective procedure for following up positive reactions to ~~ultimately~~ determine, with a high level of confidence, whether they are indicative of *infection* or not. This should involve both supplementary tests and follow-up investigation to collect diagnostic material from the original sampling unit as well as those which may be epidemiologically linked to it.

The principles involved in *surveillance* are technically well defined. The design of *surveillance* programmes to prove the absence of *infection* ~~of~~ with animal trypanosomes of African origin should be carefully followed to avoid producing results that are either insufficiently reliable to be accepted by international trading partners, or excessively costly and logistically complicated.

The results of random or targeted surveys are important in providing reliable evidence that no *infection* with animal trypanosomes of African origin is present in a country or *zone*. It is, therefore, essential that the survey is thoroughly documented. It is critical to consider the movement history of the *animals* being sampled when interpreting the results.

An active programme of *surveillance* of susceptible populations to detect evidence of *infection* with animal trypanosomes of African origin is essential to establish the *animal health status* of a country or *zone*.

1~~.~~) Clinical surveillance

Clinical *surveillance* aims to detect clinical signs of *infection* with animal trypanosomes of African origin in susceptible animals, particularly during a newly introduced *infection*. However, neither clinical nor post-mortem signs of *infection* with animal trypanosomes of African origin are pathognomonic. Therefore, suspected *cases* of *infection* with animal trypanosomes of African origin detected by clinical *surveillance* should always be confirmed by ~~diagnosis must rely on~~ direct or indirect laboratory tests that confirm the presence of trypanosomes.

Annex 16 (contd)

2~~.~~) Parasitological surveillance

~~Suspected~~ *~~cases~~* ~~of animal trypanosomes of African origin detected by clinical~~ *~~surveillance~~* ~~should always be confirmed by~~ *~~laboratory~~* ~~testing.~~

Parasitological *surveillance* can be conducted to:

a) confirm clinically suspected *cases*;

b) identify parasites at the subgenus level;

c) confirm active *infection* after positive serological results.

3~~.~~) Molecular techniques

Molecular techniques increase the sensitivity of the detection of active *infections*. They can also be applied to identify the parasite and to better characterise the genotype of circulating parasites~~ic~~ in a country or *zone*.

Molecular techniques can be used to:

a) detect an active *infection*;

b) characterise the parasite at the species, subspecies, group and population level.

4~~.~~) Serological surveillance

a) Serological testing of susceptible animals is one of the most effective methods for detecting ~~the~~ exposure to animal trypanosomes of African origin. The host species tested should reflect the epidemiology of the disease. Management variables that may influence likelihood of *infection*, such as the use of insecticides or animal treatment, should be considered.

b) ~~Due~~ Owing to cross reactions with *T. evansi, T. equiperdum, T. cruzi* and *Leishmania* spp, the presence of these pathogenic agents should be considered when interpreting the results of the serological *surveillance* system.

c)Serological *surveillance* can be used to:

i) demonstrate individual or population freedom;

ii) ~~evidence~~ detect subclinical or latent *infection* by animal trypanosomes of African origin;

iii) determine by seroprevalence the magnitude of *infection* by animal trypanosomes of African origin in the host population.

d) Positive test results can have ~~four~~ different possible causes:

i) ~~active~~ *infection*;

ii)antibodies from previous *infection* (after effective treatment or self-cure);

iii) maternal antibodies;

iv) cross reactions with *T. evansi, T. equiperdum, T. cruzi* and *Leishmania* spp.

5~~.~~) Sentinel animals

Sentinel *surveillance* may provide evidence of freedom from [*infection*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_infection) or provide data on *prevalence* and *incidence* as well as the distribution of disease or [*infection*](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_infection). Sentinel *surveillance* may consist of:

Annex 16 (contd)

a) the identification and regular testing of one or more of sentinel [animal](http://www.oie.int/index.php?id=169&L=0&htmfile=glossaire.htm#terme_animal) units of known health or immune status in a specified geographical location to detect the occurrence of *infection* with animal trypanosomes of African origin;

b) the investigation of clinical suspect *cases* targeting highly susceptible animals such as dogs, donkeys or horses.

6~~.~~) Vector surveillance

This point should be read in conjunction with Chapter 1.5.

For the purposes of this chapter, *vector* *surveillance* aims at determining different levels of *risk* by identifying the ~~various~~*~~vector~~*~~species~~ presence and abundance of various *vector* species in an area or by demonstrating the absence of *vectors*.

Demonstration of the absence of competent *vectors* ~~tsetse flies~~ may support the claim of freedom from *infection* with animal trypanosomes of African origin ~~that are cyclically transmitted~~.

The most effective way of gathering *vector* *surveillance* data should consider the biology and behavioural characteristics of the local *vector* species and include traps, fly rounds, sticky targets or other collection tools. *~~Vector surveillance~~*~~should be based on scientific sampling techniques.~~ The choice of the number and type of collecting tools to be used and the frequency of their use should be made by considering the size and ecological characteristics of the area to be surveyed.

When sentinel *animals* are used, *vector surveillance* should be conducted at the same locations.

Article 8.Y.~~16~~10.

**Additional surveillance procedures for recovery of free status**

In addition to the general conditions described in this chapter, a Member Country seeking recovery of country or *zone* free status, including a *containment zone* established in accordance with Article 4.4.7., should show evidence of an active *surveillance* programme to demonstrate absence of *infection* with animal trypanosomes of African origin.

Populations under this *surveillance* programme should include:

1) *establishments* in the proximity of the *outbreak*;

2) *establishments* epidemiologically linked to the *outbreak*;

3) *animals* moved from or used to re-populate affected *establishments*.

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_