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COMMISSION OF THE EUROPEAN COMMUNITIES

Brussels, 06.07.2007

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COMMISSION STAFF WORKING DOCUMENT

Written comments of the Community on the OIE Terrestrial Animal Health Code following the Annual General Session 2007 and prior to the next Code Commission meeting September 2007

EXPLANATORY MEMORANDUM

The OIE Terrestrial Animal Health Standards Commission met at the OIE Headquarters in Paris in March 2007.

The proposals for modifications were for possible adoption or consideration at the Annual General Session (AGS) in May 2007.

The Community sent its positions to the OIE before the AGS and stated them again during the AGS. Some of them were taken into account and some not, and some draft modifications were held over for further work.

The Community has now to comment on three kinds of texts: the texts adopted in the AGS but for which the Community comments were not taken into account; the texts being further considered; and the texts that were originally sent only for comments this year.

The Community comments need to reach the OIE Headquarters by 6 August 2007 in order to be considered at the next meeting of the Code Commission in September 2007.

The Commission therefore proposes to the Council to authorise the Commission to present to the OIE, as since 1995, the following written comments in the Annex before 6 August. This is in order to allow the OIE to take the Community comments into account during the next meeting of the Terrestrial Code Commission scheduled for 17 to 28 September 2007.

The cover letter to be sent with our response is attached (Doc D1/EB/rd(2007) D/411287).

In order to facilitate the examination of the comments of the Community, they have been incorporated in boxes into the OIE reports. In this context, the Community thanks the OIE for providing the electronic version of the Report.



UNION EUROPÉENNE

Bruxelles, le
D1/EB/rd(2007) D/411287

**Object: Meeting of the International Terrestrial Animal Health Code commission –
September 2007**

Dear Bernard,

Please find attached as an annex to this letter the Community comments on :

- Texts from part A of the report of the meeting of Code Commission held in March 2007 that were adopted during the last Annual General Session of May 2007, but for which the Community still has important comments that were not taken on board;
- Texts from part A of the report of the meeting of Code Commission last March 2007 that were eventually not proposed for adoption by the Code Commission during the last Annual General Session of May 2007, and were sent back for further comments;
- Part B of the report of the meeting of Code Commission last March 2007, proposed for comments.

In order to help the Code Commission to identify the texts for which amendments are proposed by the Community, the numbering used is that of the Code Commission Report of its March 2007 meeting.

Thank you for the continued excellent collaboration and trust you will find our comments constructive and useful.

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Enclosures: 1

Copy: All CVOs Member States, Croatia, Iceland, Norway, Turkey and Switzerland

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ANNEX

TEXTS THAT WERE SUBMITTED FOR ADOPTION AT THE 75TH GENERAL SESSION BUT DID NOT TAKE INTO ACCOUNT SOME COMMUNITY POSITIONS

The numbering used is that of the Code Commission Report of its March 2007 meeting.

2. Zoning and compartmentalisation (Chapter 1.3.5.)

Community comments:

Some precisions should still be added in order for the Chapter to be more applicable.

It would be better to have distinct sections in the chapter, for zoning and for compartmentalisation.

Now that the definition of *Containment zone* has been adopted, its general implementation should be addressed in this chapter, after having been thoroughly studied by the ad hoc group on epidemiology.

4. Foot and mouth disease (Chapter 2.2.10.)

Community comments:

Now that the principle of *Containment zone* has been adopted, its implementation should be addressed in the Chapter 1.3.5 of zoning and regionalisation, and to other chapters when needed.

The Community reiterates its position regarding risk mitigation measures to be taken when importing cattle and buffalo meat from a country where vaccination is practiced. In such cases, deboning and maturation of the meat should be recommended, at least in the case of the implementation of the *containment zone* principle.

Veterinary Administration should be replaced by *Veterinary Authority* throughout the Chapter.

8. Bovine Spongiform Encephalopathy

Community comments:

The Community thanks the OIE for not having maintained its last version regarding gelatine at the General Session in May 2007 (a point which will remain essential), but asks the Code Commission to consider some other comments that were not taken on board.

9. Equine influenza (Chapter 2.5.5.)

Community comments:

The Community requests information regarding the required time needed between vaccination and shipment in articles 2.5.5.6 and 7. This information, i.e. data from the vaccination manufacturers that corroborate the change from 14 to 21 days, were not provided by the report nor during the Annual General Session.

12. Avian influenza

b) Guidelines on surveillance for avian influenza (Appendices 3.8.9.)

Community comments:

In order to be coherent with the change that was made to Article 1 paragraph 4 of the Chapter 2.7.12 on Avian Influenza, in the article 3.8.9.3 point 1 paragraph 4 of the Guidelines on Surveillance for Avian Influenza, "HPNAI" should be replaced by "HPAI", as there is a cross reference with a contradiction: HPNAI refers to Chapter 2.7.12 Article 1 point 1 which deals with poultry only, whereas this paragraph includes all species of birds. The same applies to LPNAI, which should be replaced by "LPAI of H5 and H7 subtypes".

17. Animal welfare: Appendices 3.7.2, 3.7.3, 3.7.5 and 3.7.6

Community comments:

The Community restates its previous comments that were sent to the OIE in April 2007.

These comments are inserted in the text of the appendices adopted in the General Session of May 2007.

CHAPTER 1.3.5.

ZONING AND COMPARTMENTALISATION

Community comments:

The precisions below should be added in order for the Chapter to be more applicable.

It would be better to have distinct sections in the chapter, for zoning and for compartmentalisation.

Now that the definition of *Containment zone* has been adopted, its general implementation should be addressed in this chapter, after having been thoroughly studied by the ad hoc group on epidemiology.

Article 1.3.5.1.

Introduction

For the purposes of the *Terrestrial Code*, 'zoning' and 'regionalisation' have the same meaning.

Given the difficulty of establishing and maintaining a *disease* free status for an entire country, especially for *diseases* the entry of which is difficult to control through measures at national boundaries, there may be benefits to a Member Country in establishing and maintaining a *subpopulation* with a distinct *animal health status* within its territory. *Subpopulations* may be separated by natural or artificial geographical barriers or, in certain situations, by the application of appropriate management practices.

Zoning and compartmentalisation are procedures implemented by a country under the provisions of this chapter with a view to defining *subpopulations* of distinct *animal health status* within its territory for the purpose of *disease* control and/or *international trade*. While zoning applies to an animal subpopulation defined primarily on a geographical basis (using natural, artificial or legal boundaries), compartmentalisation applies to an animal subpopulation defined primarily by management and husbandry practices related to biosecurity. In practice, spatial considerations and good management play important roles in the application of both concepts.

Community comments:

In the last sentence of the paragraph above, the words "(including biosecurity plans)" should be added after the words "good management".

...

Article 1.3.5.2.

General considerations

...

Industry's responsibilities in most cases include the application of biosecurity measures, quality assurance schemes, monitoring the efficacy of the measures, documenting corrective actions, conducting surveillance, rapid reporting and maintenance of records in a readily accessible form.

Community comments:

The words "documenting and recording movements of animals and personnel" should be added after the words "biosecurity measures".

The *Veterinary Services* should provide movement certification, periodic inspections of facilities, biosecurity measures, records and surveillance procedures. *Veterinary Services* should conduct or audit surveillance, reporting laboratory diagnostic examinations.

Community position:

The first sentence is not clear. The words "and carry out documented" should be added after the word "certification".

...

Article 1.3.5.4.

Principles for defining a zone or compartment

...

4. Relevant animals within the *zone* or *compartment* should be identified in such a way that their history can be audited. Depending on the system of production, identification may be done at the herd, flock lot or individual animal level. Relevant animal movements into and out of the *zone* or *compartment* should be well documented, controlled and supervised. The existence of a valid animal identification system is a prerequisite to assess the integrity of the *zone* or *compartment*.

Community comments:

It was agreed in the last General Session not to make a prerequisite of a complete traceability system. Nevertheless, in order to better stress the importance of documentation together with identification for a good control, the Community proposes to:

- Add the words "and their movements documented" in the first sentence after the word "identified";
- Add the words "and documentation" in the second sentence after the word "identification".

...

CHAPTER 2.2.10.

FOOT AND MOUTH DISEASE

Community comments:

Now that the principle of *Containment zone* has been adopted its implementation should be addressed in the Chapter 1.3.5 of zoning and regionalisation;

The article 2.2.10.6bis concerning *containment zone* was not maintained "under study", so the Community reiterates its position regarding risk mitigation measures to be taken when importing cattle and buffalo meat from a country where vaccination is practiced. In such cases deboning and maturation of the meat should be recommended, at least in the case of the implementation of the *containment zone* principle. The following point should be added to article 2.2.10.20

3. comes from deboned carcasses:
 - a) from which the major lymphatic nodes have been removed;
 - b) which, prior to deboning, have been submitted to maturation at a temperature above + 2°C for a minimum period of 24 hours following slaughter and in which the pH value was below 6.0 when tested in the middle of both the longissimus dorsi.

Veterinary Administration should be replaced by *Veterinary Authority* throughout the Chapter.

...

Article 2.2.10.20.

When importing from FMD free countries where vaccination is practised or from FMD free zones where vaccination is practised, *Veterinary Administrations* should require:

for fresh meat of cattle and buffalo (*Bubalus bubalis*) (excluding feet, head and viscera)

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

1. have been kept in the FMD free country or zone where vaccination is practised since birth, or which have been imported in accordance with Article 2.2.10.9., Article 2.2.10.10. or Article 2.2.10.11.;
2. have been slaughtered in an *approved abattoir* and have been subjected to ante-mortem and post-mortem inspections for FMD with favourable results.

CHAPTER 2.3.13.

BOVINE SPONGIFORM ENCEPHALOPATHY**Comment of the Community:**

The Community thanks the OIE for not having maintained its last version regarding gelatine at the General Session in May 2007 (a point which will remain essential), but asks the Code Commission to consider some other comments that were not taken on board.

Article 2.3.13.1.

The recommendations in this Chapter are intended to manage the human and animal health risks associated with the presence of the bovine spongiform encephalopathy (BSE) agent in cattle (*Bos taurus* and *B. indicus*) only.

1. When authorising import or transit of the following *commodities* and any products made from these *commodities* and containing no other tissues from cattle, *Veterinary Administrations* should not require any BSE related conditions, regardless of the BSE risk status of the cattle population of the *exporting country, zone or compartment*.
 - a) *milk* and *milk products*;
 - b) semen and *in vivo* derived cattle embryos collected and handled in accordance with the recommendations of the International Embryo Transfer Society;
 - c) hides and skins;
 - d) gelatine and collagen prepared exclusively from hides, and skins;
 - e) protein-free tallow (maximum level of insoluble impurities of 0.15% in weight) and derivatives made from this tallow;

Comments of the Community:

The Community would like to remind the Code Commission of its previous opinion on this point and to restate its position.

Based on the outcome of the Quantitative risk assessment and the subsequent update of the European Food Safety Authority (EFSA) of the scientific opinions on tallow. the Community can only support the inclusion of protein-free tallow with a maximal 0,15% insoluble impurities to the list under Article 2.3.13.1, point 1) if no SRM is used for the production of tallow and that the animals of which the raw material has been derived, have passed ante- and post mortem inspection.

- f) dicalcium phosphate (with no trace of protein or fat);
- g) deboned skeletal muscle meat (excluding mechanically separated meat) from cattle 30 months of age or less, which were not subjected to a stunning process prior to slaughter, with a device injecting compressed air or gas into the cranial cavity or to a pithing process, and which passed ante-mortem and post-mortem inspections and which has been prepared in a manner to avoid

contamination with tissues listed in Article 2.3.13.13.;

Comment of the Community:

The definition of deboned skeletal muscle meat should be clearly defined.

- h) blood and blood by-products, from cattle which were not subjected to a stunning process, prior to slaughter, with a device injecting compressed air or gas into the cranial cavity, or to a pithing process.
2. When authorising import or transit of other *commodities* listed in this Chapter, *Veterinary Administrations* should require the conditions prescribed in this Chapter relevant to the BSE risk status of the cattle population of the *exporting country, zone or compartment*.

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

...

Article 2.3.13.3.

Negligible BSE risk

Commodities from the cattle population of a country, *zone* or *compartment* pose a negligible risk of transmitting the BSE agent if the following conditions are met:

1. a *risk assessment*, as described in point 1 of Article 2.3.13.2., has been conducted in order to identify the historical and existing risk factors, and the country has demonstrated that appropriate specific measures have been taken for the relevant period of time defined below to manage each identified risk;
2. the country has demonstrated that Type B surveillance in accordance with Appendix 3.8.4. is in place and the relevant points target, in accordance with Table 1, has been met;
3. EITHER:
 - a) there has been no *case* of BSE or, if there has been a *case*, every *case* of BSE has been demonstrated to have been imported and has been completely destroyed, and
 - i) the criteria in points 2 to 4 of Article 2.3.13.2. have been complied with for at least 7 years; and
 - ii) it has been demonstrated through an appropriate level of control and audit that for at least 8 years neither *meat-and-bone meal* nor *greaves* derived from ruminants has been fed to ruminants;

Comment of the Community:

The Community would like to remind the Code Commission of its previous opinion on this point and to restate its position:

Experience within the European Community pointed out the risk of cross-contamination when applying a restricted ruminant to ruminant feed ban. The Community proposes to modify Article 2.3.13.3., point 3a) ii) as follows:

“ii) it has been demonstrated, through an appropriate level of control and audit, that for at

least 8 years meat-and-bone meal or greaves derived from mammals has not been fed to ruminants;”

This comment also applies to Article 2.3.13.3., point 3a) ii), Article 2.3.13.4, point 3a)(ii) and 3b)(ii), Article 2.3.13.6a, point a)(2), Article 2.3.13.7, point 3), Article 2.3.13.8, point 1 and 3(b), Article 2.3.13.9, point 3 and Article 11, point 1(a).

OR

- b) if there has been an indigenous *case*, every indigenous *case* was born more than 11 years ago; and
- i) the criteria in points 2 to 4 of Article 2.3.13.2. have been complied with for at least 7 years; and
 - ii) it has been demonstrated through an appropriate level of control and audit that for at least 8 years neither *meat-and-bone meal* nor *greaves* derived from ruminants has been fed to ruminants; and
 - iii) all BSE cases, as well as:
 - all cattle which, during their first year of life, were reared with the BSE *cases* during their first year of life, and which investigation showed consumed the same potentially contaminated feed during that period, or
 - if the results of the investigation are inconclusive, all cattle born in the same herd as, and within 12 months of the birth of, the BSE *cases*,if alive in the country, *zone* or *compartment*, are permanently identified, and their movements controlled, and, when slaughtered or at death, are completely destroyed.

...

Article 2.3.13.6.a

When importing from a country, *zone* or *compartment* posing a negligible BSE risk, but where there has been an indigenous case, *Veterinary Administrations* should require:

for cattle selected for export

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

1. are identified by a permanent identification system in such a way as to demonstrate that they are not exposed cattle as described in point 3) b) iii) of Article 2.3.13.3.;
2. were born after the date from which the ban on the feeding of ruminants with *meat-and-bone meal* and *greaves* derived from ruminants had been effectively enforced.

Comment of the Community:

The possibility of cases born just after the implementation of the feed ban should also be considered and should not always, based on the situation and an assessment, constitute a reason to question the negligible risk status.

The Community proposes the following:

“2. were born after the date from which the ban on the feeding of ruminants with meat-and-bone meal and greaves derived from mammals had been effectively enforced or after the date of birth of the last indigenous case if that indigenous case was born after the date of the feed ban .”

Article 2.3.13.7.

When importing from a country, *zone* or *compartment* posing a controlled BSE risk, *Veterinary Administrations* should require:

for cattle

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

1. the country, *zone* or *compartment* complies with the conditions referred to in Article 2.3.13.4.;
2. cattle selected for export are identified by a permanent identification system in such a way as to demonstrate that they are not exposed cattle as described in point 3b)iii) of Article 2.3.13.4.;
3. cattle selected for export were born after the date from which the ban on the feeding of ruminants with *meat-and-bone meal and greaves* derived from ruminants was effectively enforced.

Comment of the Community:

The possibility of cases born just after the implementation of the feed ban should also be considered and should not always, based on the situation and an assessment, constitute a reason to question the negligible risk status.

The Community proposes the following:

“3. cattle selected for export were born after the date from which the ban on the feeding of ruminants with meat-and-bone meal and greaves derived from mammals had been effectively enforced or after the date of birth of the last indigenous case if that indigenous case was born after the date of the feed ban .”

...

Article 2.3.13.10.

When importing from a country, *zone* or *compartment* with a controlled BSE risk, *Veterinary Administrations* should require:

for *fresh meat* and *meat products* from cattle (other than those listed in point 1 of Article 2.3.13.1.)

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

1. the country, *zone* or *compartment* complies with the conditions referred to in Article 2.3.13.4.;
2. the cattle from which the *fresh meat* and *meat products* were derived passed ante-mortem and post-mortem inspections;
3. cattle from which the *fresh meat* and *meat products* destined for export were derived were not subjected to a stunning process, prior to slaughter, with a device injecting compressed air or gas into the cranial cavity, or to a pithing process;
4. the *fresh meat* and *meat products* were produced and handled in a manner which ensures that such

products do not contain and are not contaminated with:

- a) the tissues listed in points 1 and 2 of Article 2.3.13.13.,
- b) mechanically separated meat from the skull and vertebral column from cattle over 30 months of age.

Comment of the European Community:

The Community would like to remind the Code Commission of its previous opinion on this point and to restate its position:

The Community feels that for control reasons the harvesting of mechanically recovered meat should not only be extended to the skull or vertebral column of bovine animals of any age but should also be extended to all bovine bones.

In view of this the Community suggest replacing article 2.3.13.10 point 4 b) with:

'4) b) mechanically separated meat from all bones from cattle of all ages,'

Article 2.3.13.11.

When importing from a country, *zone* or *compartment* with an undetermined BSE risk, *Veterinary Administrations* should require:

for *fresh meat* and *meat products* from cattle (other than those listed in point 1 of Article 2.3.13.1.)

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

1. the cattle from which the *fresh meat* and *meat products* originate:
 - a) have not been fed *meat-and-bone meal* or *greaves* derived from ruminants;
 - b) passed ante-mortem and post-mortem inspections;
 - c) were not subjected to a stunning process, prior to slaughter, with a device injecting compressed air or gas into the cranial cavity, or to a pithing process;
2. the *fresh meat* and *meat products* were produced and handled in a manner which ensures that such products do not contain and are not contaminated with:
 - a) the tissues listed in points 1 and 3 of Article 2.3.13.13.;
 - b) nervous and lymphatic tissues exposed during the deboning process;
 - c) mechanically separated meat from the skull and vertebral column from cattle over 12 months of age.

Comment of the European Community:

The Community would like to remind the Code Commission of its previous opinion on this point and to restate its position:

The Community feels that for control reasons the harvesting of mechanically recovered meat should not only be extended to the skull or vertebral column of bovine animals of any age but should also be extended to all bovine bones.

In view of this the Community suggest replacing article 2.3.13.11 point 2 c) with:

'2) c) mechanically separated meat from all bones from cattle of all ages,'

...

Article 2.3.13.13.

1. From cattle of any age originating from a country, *zone* or *compartment* defined in Articles 2.3.13.4. and 2.3.13.5., the following commodities, and any commodity contaminated by them, should not be traded for the preparation of food, feed, fertilisers, cosmetics, pharmaceuticals including biologicals, or medical devices: tonsils and distal ileum. Protein products, food, feed, fertilisers, cosmetics, pharmaceuticals or medical devices prepared using these commodities (unless covered by other Articles in this Chapter) should also not be traded.

Comments of the Community

In its opinion of 29 June 2001 on adipose tissue associated with the digestive tract of cattle, sheep and goats, the Scientific Steering Committee pointed out that potential infectivity could be found in the mesenteric nerves and the mesenteric lymph nodes situated near the arteria mesenterica in bovine animals.

Furthermore, the Community would welcome any updated scientific basis to define only the distal ileum as specified risk material instead of the whole intestine.

2. From cattle that were at the time of slaughter over 30 months of age originating from a country, *zone* or *compartment* defined in Article 2.3.13.4., the following commodities, and any commodity contaminated by them, should not be traded for the preparation of food, feed, fertilisers, cosmetics, pharmaceuticals including biologicals, or medical devices: brains, eyes, spinal cord, skull and vertebral column. Protein products, food, feed, fertilisers, cosmetics, pharmaceuticals or medical devices prepared using these commodities (unless covered by other Articles in this Chapter) should also not be traded.

Comment of the Community:

The Community would like to remind the Code commission of its previous opinion on this point and to restate its position:

In the opinions of the former Scientific Steering Committee it was considered that the intestines and tonsils of bovine animals should be considered a risk at any age and therefore be removed in all cattle. For the rest of SRM the SSC took, according to the opinion, an extremely cautious approach and although it was considered extremely unlikely to have detectable infectivity below an age of 30 months being the half of the mean incubation period in field BSE cases (60 months), the exceptional finding of BSE cases in younger animals lead to an age limit of 12 months. This age limit was considered by the SSC as a considerable reassurance of non-infectivity.

The recent conclusions from the recent EFSA opinion on SRM, published in May 2005, stated that following a cautious approach and taking into account the appearance of infectivity in central nervous system (CNS) at $\frac{3}{4}$ of the incubation period and the age of BSE cases in young animals (less than 35 months old, 0.06 % of total of BSE cases), a cut-off at 21 months would give the highest safety margin. If the rare BSE cases found in very young animals (4 cases in 40 Million tested since 2001) are not taken into account, a cut-off at 30 months would represent a "considerable but not an absolute safety margin with respect to detectable infectivity". There is no scientific basis to raise the age limit for removal of tonsils and intestines. The EFSA recommends further work on the epidemiological data to evaluate the likelihood of infectivity in SRM derived from young animals. On 19 April 2007 the EFSA adopted an opinion which took

into account the latest results of the pathogenesis studies as well as the epidemiological data available from the monitoring programme in the European Union since 2001.

Awaiting an internal discussion based on the new scientific opinion, the Community reserves its position on the 30 month age limit.

3. From cattle that were at the time of slaughter over 12 months of age originating from a country, *zone* or *compartment* defined in Article 2.3.13.5., the following commodities, and any commodity contaminated by them, should not be traded for the preparation of food, feed, fertilisers, cosmetics, pharmaceuticals including biologicals, or medical devices: brains, eyes, spinal cord, skull and vertebral column. Protein products, food, feed, fertilisers, cosmetics, pharmaceuticals or medical devices prepared using these commodities (unless covered by other Articles in this Chapter) should also not be traded.
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CHAPTER 2.5.5.
EQUINE INFLUENZA

Community comments:

The Community requests information regarding the required time needed between vaccination and shipment in articles 2.5.5.6 and 7. This information, i.e. data from the vaccination manufacturers that corroborate the change from 14 to 21 days, were not provided by the report nor during the Annual General Session.

Article 2.5.5.6.

When importing horses for unrestricted movement, *Veterinary Administrations* should require:

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

1. came from an EI free country, *zone* or *compartment* in which they had been resident for at least 21 days; in the case of a vaccinated horse, information on its vaccination status should be included in the veterinary certificate;

OR

2. came from a country, *zone* or *compartment* not known to be free from EI, were subjected to pre-export isolation for 21 days and showed no clinical sign of EI during isolation nor on the day of shipment; and
3. were vaccinated according to the manufacturer's instructions between 21 and 90 days before shipment either with a primary course or a booster.

Article 2.5.5.7.

When importing horses which will be kept in isolation (see Article 2.5.5.1.), *Veterinary Administrations* should require:

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

1. came from an EI free country, *zone* or *compartment* in which they had been resident for at least 21 days; in the case of a vaccinated horse, information on its vaccination status should be included in the veterinary certificate;

OR

2. showed no clinical sign of EI in any premises in which the horses had been resident for the ~~30~~ 21 days prior to shipment nor on the day of shipment; and
3. were vaccinated according to the manufacturer's instructions between 21 and 90 days before shipment either with a primary course or a booster;

APPENDIX 3.8.9.

GUIDELINES ON SURVEILLANCE FOR AVIAN INFLUENZA

Community comments:

In order to be coherent with the change that was made to Article 1 paragraph 4 of the Chapter 2.7.12 on Avian Influenza, in the article 3.8.9.3 point 1 paragraph 4 of the Guidelines on Surveillance for Avian Influenza, "HPNAI" should be replaced by "HPAI", as there is a cross reference with a contradiction: HPNAI refers to Chapter 2.7.12 Article 1 point 1 which deals with poultry only, whereas this paragraph includes all species of birds. The same applies to LPNAI, which should be replaced by "LPAI of H5 and H7 subtypes".

...

Article 3.8.9.3.

Surveillance strategies

 1. Introduction

The target population for surveillance aimed at identification of *disease* and *infection* should cover all the susceptible poultry species within the country, *zone* or *compartment*. Active and passive surveillance for NAI should be ongoing. The frequency of active surveillance should be at least every 6 months. Surveillance should be composed of random and targeted approaches using virological, serological and clinical methods.

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

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

A country should justify the surveillance strategy chosen as adequate to detect the presence of NAIV infection in accordance with Appendix 3.8.1. and the prevailing epidemiological situation, including cases of HPNAI an LPNAI detected in any birds. It may, for example, be appropriate to target clinical surveillance at particular species likely to exhibit clear clinical signs (e.g. chickens). Similarly, virological and serological testing could be targeted to species that may not show clinical signs (e.g. ducks).

Community position:

In the above paragraph, the word "HPNAI" should be replaced by "HPAI", and the word "LPNAI" should be replaced by "LPAI of H5 and H7 subtypes".

APPENDIX 3.7.2.

GUIDELINES FOR THE TRANSPORT OF ANIMALS BY SEA

Community comments:

The Community thanks the OiE Code Commission for its work that improves the clarity and applicability of the Guidelines. However, it wishes too that some minor but important amendments as indicated below are taken on board.

Preamble: These guidelines apply to the following live domesticated animals: cattle, buffalo, deer, camelids, sheep, goats, pigs and equines. They may also be applicable to other domesticated animals.

Article 3.7.2.1.

The amount of time animals spend on a *journey* should be kept to the minimum.

Article 3.7.2.1. bis

1. Animal behaviour

Animal handlers should be experienced and competent in handling and moving farm livestock and understand the behaviour patterns of animals and the underlying principles necessary to carry out their tasks.

The behaviour of individual animals or groups of animals will vary depending on their breed, sex, temperament and age and the way in which they have been reared and handled. Despite these differences, the following behaviour patterns, which are always present to some degree in domestic animals, should be taken into consideration in handling and moving the animals.

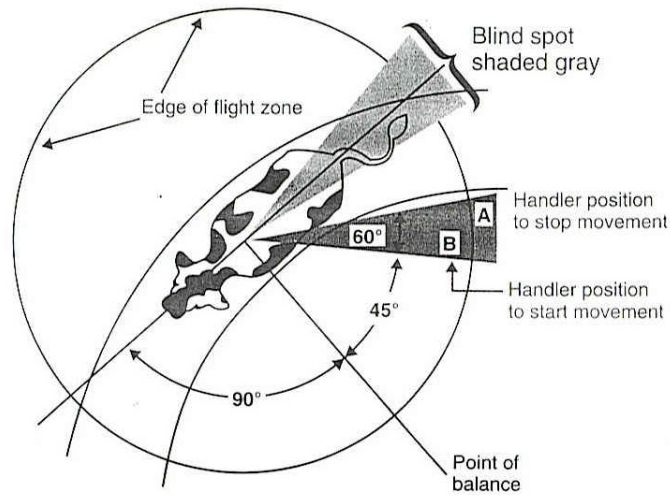
Most domestic livestock are kept in herds and follow a leader by instinct.

Animals which are likely to be hostile to each other in a group situation should not be mixed.

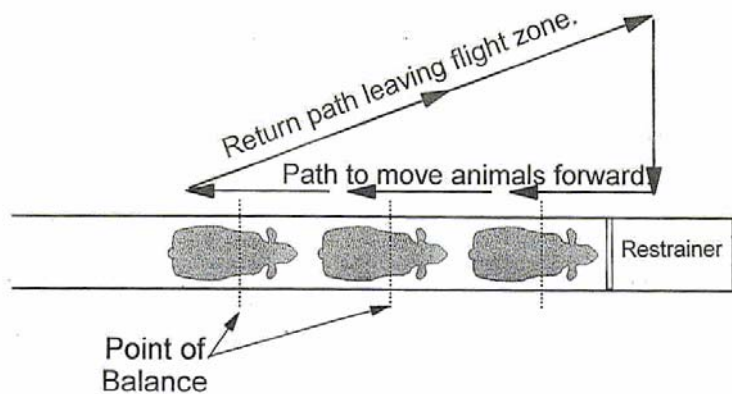
The desire of some animals to control their personal space should be taken into account in designing *loading* and *unloading* facilities, transport *vessels* and *containers*.

Domestic animals will try to escape if any person approaches closer than a certain distance. This critical distance, which defines the flight zone, varies among species and individuals of the same species, and depends upon previous contact with humans. Animals reared in close proximity to humans (i.e. tame) have a smaller flight zone, whereas those kept in free range or extensive systems may have flight zones which may vary from one metre to many metres. *Animal handlers* should avoid sudden penetration of the flight zone which may cause a panic reaction which could lead to aggression or attempted escape.

An example of a flight zone (cattle)



Animal handler movement pattern to move cattle forward



Animal handlers should use the point of balance at the animal's shoulder to move animals, adopting a position behind the point of balance to move an animal forward and in front of the point of balance to move it backward.

Domestic animals have a wide-angle vision but only have a limited forward binocular vision and poor perception of depth. This means that they can detect objects and movements beside and behind them, but can only judge distances directly ahead.

Domestic animals can hear over a greater range of frequencies than humans and are more sensitive to higher frequencies. They tend to be alarmed by constant loud noises and by sudden noises, which may cause them to panic. Sensitivity to such noises should also be taken into account when handling animals.

2. Distractions and their removal

Design of new *loading* and *unloading* facilities or modification of existing facilities should aim to minimise the potential for distractions that may cause approaching animals to stop, baulk or turn back. Below are examples of common distractions and methods for eliminating them:

- a) reflections on shiny metal or wet floors - move a lamp or change lighting;
- b) dark entrances - illuminate with indirect lighting which does not shine directly into the eyes of approaching animals;
- c) animals seeing moving people or equipment up ahead - install solid sides on chutes and races or install shields;
- d) dead ends-avoid if possible by curving the passage, or make an illusory passage;
- e) chains or other loose objects hanging in chutes or on fences - remove them;
- f) uneven floors or a sudden drop in floor levels – avoid uneven floor surfaces or install a solid false floor to provide an illusion of a solid and continuous walking surface;
- g) sounds of air hissing from pneumatic equipment - install silencers or use hydraulic equipment or vent high pressure to the external environment using flexible hosing;
- h) clanging and banging of metal objects - install rubber stops on gates and other devices to reduce metal to metal contact;
- i) air currents from fans or air curtains blowing into the face of animals - redirect or reposition equipment.

Article 3.7.2.2.

Responsibilities

Once the decision to transport the animals by sea has been made, the welfare of the animals during their *journey* is the paramount consideration and is the joint responsibility of all people involved. The individual responsibilities of persons involved will be described in more detail in this Article. These guidelines may also be applied to the transport of animals by water within a country.

The management of animals at post-discharge facilities is outside the scope of this Appendix.

Written Community comments:

In the following paragraph the word "importers" and the related text should be deleted.

Justification

For the moment it is not clear what the definition and the responsibilities for importers are.

1. General considerations

- a) Exporters, importers, owners of animals, business or buying/selling agents, shipping companies, masters of *vessels* and managers of facilities are jointly responsible for the general health of the animals and their fitness for the *journey*, and for their overall welfare during the *journey*, regardless of whether duties are subcontracted to other parties during transport.
- b) Exporters, shipping companies, business or buying/selling agents, and masters of *vessels* are jointly responsible for planning the *journey* to ensure the care of the animals, including:
 - i) choosing appropriate *vessels* and ensuring that *animal handlers* are available to care for the animals;
 - ii) developing and keeping up to date contingency plans to address emergencies (including adverse weather conditions) and minimise stress during transport;
 - iii) correct *loading* of the ship, provision of appropriate food, water, ventilation and protection from adverse weather, regular inspections during the *journey* and for appropriate responses to problems arising;
 - iv) disposal of carcasses according to international law.
- c) To carry out the above mentioned responsibilities, the parties involved should be competent regarding transport regulations, equipment usage, and the humane handling and care of animals.

2. Specific considerations

- a) The responsibilities of the exporters include:
 - i) the organisation, carrying out and completion of the *journey*, regardless of whether duties are subcontracted to other parties during transport;
 - ii) ensuring that equipment and medication are provided as appropriate for the species and the *journey*;
 - iii) securing the presence of the appropriate number of *animal handlers* competent for the species being transported;
 - iv) ensuring compliance of the animals with any required veterinary certification, and their fitness to travel;
 - v) in case of animals for export, ensuring compliance with any requirements of the *importing* and *exporting countries*.
- b) The responsibilities of the importers include:

(under study)
- c) The responsibilities of the owners of the animals include the selection of animals that are fit to travel based on veterinary recommendations.

- d) The responsibilities of the business or buying/selling agent include:
- i) selection of animals that are fit to travel based on veterinary recommendations;
 - ii) availability of suitable facilities for the assembly, *loading*, transport, *unloading* and holding of animals at the start and at the end of the *journey*, and for emergencies.
- e) The responsibilities of shipping companies include:
- (under study)
- f) The responsibilities of masters of *vessels* include the provision of suitable premises for animals on the *vessel*.
- g) The responsibilities of managers of facilities during *loading* include:
- i) providing suitable premises for *loading* the animals;
 - ii) providing an appropriate number of *animal handlers* to load the animals with minimum stress and the avoidance of injury;
 - iii) minimising the opportunities for disease transmission while the animals are in the facilities;
 - iv) providing appropriate facilities for emergencies;
 - v) providing facilities, *veterinarians* or *animal handlers* capable of *killing* animals humanely when required.
- h) The responsibilities of managers of facilities during *unloading* include:
- i) providing suitable facilities for *unloading* the animals onto transport *vehicles* for immediate movement or securely holding the animals in *lairage*, with shelter, water and feed, when required, for transit;
 - ii) providing *animal handlers* to unload the animals with minimum stress and injury;
 - iii) minimising the opportunities for disease transmission while the animals are in the facilities;
 - iv) providing appropriate facilities for emergencies;
 - v) providing facilities, and *veterinarians* or *animal handlers* capable of *killing* animals humanely when required.
- i) The responsibilities of the *animal handlers* include humane handling and care of the animals, especially during *loading* and *unloading*.
- j) The responsibilities of the *Competent Authority* of the *exporting country* include:
- i) establishing minimum standards for animal welfare, including requirements for inspection of animals before and during their travel, and for certification and record keeping;

Written Community comments:

Point ii): The word "approving" should be replaced by "inspecting"

Justification

The wording "approving" implies an administrative process that it is not necessarily in place and necessary.

- ii) approving facilities, *containers, vehicles/vessels* for the holding and transport of animals;
- iii) setting competence standards for *animal handlers* and managers of facilities;
- v) implementation of the standards, including through accreditation of / interaction with other organisations and *Competent Authorities*;

Written Community comments:

Point vi): The part of the sentence "performance... medications" should be replaced by "of the animals at the point of loading."

Justification

The new wording clarifies the responsibilities of the competent authorities which correspond to their practical and legal ability to verify animal welfare standards.

- vi) monitor and evaluate health and welfare performance, including the use of any veterinary medications.
- k) The responsibilities of the *Competent Authority* of the *importing country* include:
- i) establishing minimum standards for animal welfare, including requirements for inspection of animals after their travel, and for certification and record keeping;

Written Community comments:

The word "approve" should be replaced by "inspect"

Justification

The wording "approve" implies an administrative process that it is not necessarily in place and necessary.

- ii) approve facilities, *containers, vehicles/vessels* for the holding and transport of animals;
- iii) setting competence standards for *animal handlers* and managers of facilities;
- iv) implementation of the standards, including through accreditation of / interaction with other organisations and *Competent Authorities*;
- v) ensuring that the *exporting country* is aware of the required standards for the *vessel* transporting the animals;

Written Community comments:

The part of the sentence "performance... medications." Should be replaced by

"of the animals at the point of unloading."

Justification

The new wording clarifies the responsibilities of the competent authorities which correspond to their practical and legal ability to verify animal welfare standards.

- vi) monitor and evaluate health and welfare performance, including the use of any veterinary medications.
- vii) give animal consignments priority to allow import procedures to be completed without unnecessary delay.
- m) The responsibilities of *veterinarians* or in the absence of a *veterinarian*, the *animal handlers* travelling on the *vessel* with the animals include:
 - i) humane handling and treatment of animals during the *journey*, including in emergencies, such as humane killing of the animals;
 - ii) possess ability to report and act independently;
 - iii) meet daily with the master of the *vessel* to obtain up-to-date information on animal health and welfare status.
- n) The receiving *Competent Authority* should report back to the sending *Competent Authority* on *significant* animal welfare problems which occurred during the *journey*.

Article 3.7.2.3.

Competence

1. All people responsible for animals during *journeys*, should be competent to carry out the relevant responsibilities listed in Article 3.7.2.2. Competence in areas other than animal welfare would need to be addressed separately. Competence may be gained through formal training and/or practical experience.
2. The assessment of competence of *animal handlers* should at a minimum address knowledge, and ability to apply that knowledge, in the following areas:
 - a) planning a *journey*, including appropriate *space allowance*, feed, water and ventilation requirements;
 - b) responsibilities for the welfare of animals during the *journey*, including *loading* and *unloading*;
 - c) sources of advice and assistance;
 - d) animal behaviour, general signs of disease, and indicators of poor animal welfare such as stress, pain and fatigue, and their alleviation;
 - e) assessment of fitness to travel; if fitness to travel is in doubt, the animal should be examined by a *veterinarian*;
 - f) relevant authorities and applicable transport regulations, and associated documentation requirements;
 - g) general disease prevention procedures, including cleaning and *disinfection*;

- h) appropriate methods of animal handling during transport and associated activities such as assembling, *loading*, and *unloading*;
 - i) methods of inspecting animals, managing situations frequently encountered during transport such as adverse weather conditions, and dealing with emergencies, including euthanasia;
 - j) species-specific aspects and age-specific aspects of animal handling and care, including feeding, watering and inspection; and
 - k) maintaining a *journey* log and other records.
5. Assessment of competence for exporters should at a minimum address knowledge, and ability to apply that knowledge, in the following areas:
- a) planning a *journey*, including appropriate *space allowances*, and feed, water and ventilation requirements;
 - b) relevant authorities and applicable transport regulations, and associated documentation requirements;
 - c) appropriate methods of animal handling during transport and associated activities such as cleaning and *disinfection*, assembling, *loading*, and *unloading*;
 - d) species-specific aspects of animal handling and care, including appropriate equipment and medication;
 - e) sources of advice and assistance;
 - f) appropriate record keeping; and
 - g) managing situations frequently encountered during transport, such as adverse weather conditions, and dealing with emergencies.

Article 3.7.2.4.

Planning the journey

1. General considerations

- a) Adequate planning is a key factor affecting the welfare of animals during a *journey*.
- b) Before the *journey* starts, plans should be made in relation to:
 - i) preparation of animals for the *journey*;
 - ii) type of transport *vessel* required;
 - iii) route, taking into account distance, expected weather and sea conditions;
 - iv) nature and duration of *journey*;
 - v) daily care and management of the animals, including the appropriate number of *animal handlers*, to help ensure the health and welfare of all the animals;
 - vi) avoiding the mixing of animals from different sources in a single pen group;

- vii) provision of appropriate equipment and medication for the numbers and species carried; and
- viii) emergency response procedures.

2. Preparation of animals for the journey

- a) When animals are to be provided with a novel diet or unfamiliar methods of supplying of feed or water, they should be preconditioned.
- b) There should be planning for water and feed availability during the *journey*. Feed should be of appropriate quality and composition for the species, age, condition of the animals, etc.
- c) Extreme weather conditions are hazards for animals undergoing transport and require appropriate *vessel* design to minimise risks. Special precautions should be taken for animals that have not been acclimatised or which are unsuited to either hot or cold conditions. In some extreme conditions of heat or cold, animals should not be transported at all.
- d) Animals more accustomed to contact with humans and with being handled are likely to be less fearful of being loaded and transported. Animals should be handled and loaded in a manner that reduces their fearfulness and improves their approachability.
- e) Behaviour-modifying (such as tranquillisers) or other medication should not be used routinely during transport. Such medicines should only be administered when a problem exists in an individual animal, and should be administered by a *veterinarian* or other person who has been instructed in their use by a *veterinarian*. Treated animals should be placed in a dedicated area.

3. Control of disease

As animal transport is often a significant factor in the spread of infectious diseases, *journey* planning should take into account the following:

- a) When possible and agreed by the *Veterinary Authority* of the *importing country*, animals should be vaccinated against diseases to which they are likely to be exposed at their destination.
- b) Medications used prophylactically or therapeutically should only be administered by a *veterinarian* or other person who has been instructed in their use by a *veterinarian*.
- c) Mixing of animals from different sources in a single consignment should be minimized.

4. Vessel and container design and maintenance

- a) *Vessels* used for the sea transport of animals should be designed, constructed and fitted as appropriate to the species, size and weight of the animals to be transported. Special attention should be paid to the avoidance of injury to animals through the use of secure smooth fittings free from sharp protrusions and the provision of non-slip flooring. The avoidance of injury to *animal handlers* while carrying out their responsibilities should be emphasised.
- b) *Vessels* should be properly illuminated to allow animals to be observed and inspected.
- c) *Vessels* should be designed to permit thorough cleaning and *disinfection*, and the management of faeces and urine.

- d) *Vessels* and their fittings should be maintained in good mechanical and structural condition.
- e) *Vessels* should have adequate ventilation to meet variations in climate and the thermo-regulatory needs of the animal species being transported. The ventilation system should be effective when the *vessel* is stationary. An emergency power supply should be available to maintain ventilation in the case of primary machinery breakdown.
- f) The feeding and watering system should be designed to permit adequate access to feed and water appropriate to the species, size and weight of the animals, and to minimise soiling of pens.
- g) *Vessels* should be designed so that the faeces or urine from animals on upper levels do not soil animals on lower levels, or their feed or water.
- h) *Loading* and stowage of feed and bedding should be carried out in such a way to ensure protection from fire hazards, the elements and sea water.
- i) Where appropriate, suitable bedding, such as straw or sawdust, should be added to *vessel* floors to assist absorption of urine and faeces, provide better footing for animals and protect animals (especially young animals) from hard or rough flooring surfaces and adverse weather conditions.
- j) The above principles apply also to *containers* used for the transport of animals.

5. Special provisions for transport in road vehicles on roll-on/roll-off vessels or for containers

- a) Road *vehicles* and *containers* should be equipped with a sufficient number of adequately designed, positioned and maintained securing points enabling them to be securely fastened to the *vessel*.
- b) Road *vehicles* and *containers* should be secured to the ship before the start of the sea *journey* to prevent them being displaced by the motion of the *vessel*.
- c) *Vessels* should have adequate ventilation to meet variations in climate and the thermo-regulatory needs of the animal species being transported, especially where the animals are transported in a secondary *vehicle/container* on enclosed decks.
- d) Due to the risk of limited airflow on certain ~~vessels'~~ decks of a vessel, a road *vehicle* or *container* may require a forced ventilation system of greater capacity than that provided by natural ventilation.

6. Nature and duration of the journey

The maximum duration of a *journey* should be determined taking into account factors that determine the overall welfare of animals, such as:

- a) the ability of the animals to cope with the stress of transport (such as very young, old, lactating or pregnant animals);
- b) the previous transport experience of the animals;
- c) the likely onset of fatigue;
- d) the need for special attention;
- e) the need for feed and water;

- f) the increased susceptibility to injury and disease;
- g) *space allowance* and *vessel* design;
- h) weather conditions;
- i) vessel type used, method of propulsion and risks associated with particular sea conditions.

7. Space allowance

- a) The number of animals which should be transported on a *vessel* and their allocation to different pens on the *vessel* should be determined before *loading*.
- b) The amount of space required, including headroom, depends on the species of animal and should allow the necessary thermoregulation. Each animal should be able to assume its natural position for transport (including during *loading* and *unloading*) without coming into contact with the roof or upper deck of the *vessel*. When animals lie down, there should be enough space for every animal to adopt a normal lying posture.
- c) Calculations for the *space allowance* for each animal should be carried out, in reference to a relevant national or international document. The size of pens will affect the number of animals in each.
- d) The same principles apply when animals are transported in *containers*.

8. Ability to observe animals during the journey

Animals should be positioned to enable each animal to be observed regularly and clearly by *animal handler* or other responsible person, during the *journey* to ensure their safety and good welfare.

9. Emergency response procedures

There should be an emergency management plan that identifies the important adverse events that may be encountered during the *journey*, the procedures for managing each event and the action to be taken in an emergency. For each important event, the plan should document the actions to be undertaken and the responsibilities of all parties involved, including communications and record keeping.

Article 3.7.2.5.

Documentation

- 1. Animals should not be loaded until the documentation required to that point is complete.
- 2. The documentation accompanying the consignment should include:
 - a) *journey* travel plan and an emergency management plan;
 - b) time, date and place of *loading*;
 - c) the *journey* log – a daily record of inspection and important events which includes records of morbidity and mortality and actions taken, climatic conditions, food and water consumed, medication provided, mechanical defects;

- d) expected time, date and place of arrival and *unloading*;
 - e) veterinary certification, when required;
 - f) *animal identification* to allow *animal traceability* of animals to the premises of departure, and, where possible, to the premises of origin;
 - g) details of any animals considered at particular risk of suffering poor welfare during transport (point 3e) of Article 3.7.2.6.);
 - h) number of *animal handlers* on board, and their competencies; and
 - i) *stocking density* estimate for each load in the consignment.
3. When veterinary certification is required to accompany consignments of animals, it should address:
- a) when required, details of *disinfection* carried out;
 - b) fitness of the animals to travel;
 - c) *animal identification* (description, number, etc.); and
 - d) health status including any tests, treatments and vaccinations carried out.

Article 3.7.2.6.

Pre-journey period

1. General considerations

Written Community comment

In point 1 (a) the following text should be added "...minimum stress *and risk* to the animals".

Justification

Cleaning can also be a risk for the animals (e.g. gear and chemicals).

- a) Before each *journey*, *vessels* should be thoroughly cleaned and, if necessary, treated for animal and public health purposes, using chemicals approved by the *Competent Authority*. When cleaning is necessary during a *journey*, this should be carried out with the minimum of stress to the animals.
- b) In some circumstances, animals may require pre-*journey* assembly. In these circumstances, the following points should be considered:
 - i) Pre-*journey* rest is necessary if the welfare of animals has become poor during the collection period because of the physical environment or the social behaviour of the animals.

Written Community comment

The point 1 (b) (ii) should be deleted.

Justification

Since the journey on a ship is usually very long, feed deprivation is not justifiable. In addition it is possible to reduce urine and faeces by proceeding to regular cleaning of the pens, using proper drainage facilities or adding new litter.

- ii) For animals such as pigs which are susceptible to motion sickness, and in order to reduce urine and faeces production during the *journey*, a species-specific short period of feed deprivation prior to *loading* is desirable.
- iii) When animals are to be provided with a novel diet or unfamiliar methods of supplying feed or water, they should be preconditioned.
- c) Where an *animal handler* believes that there is a significant risk of disease among the animals to be loaded or significant doubt as to their fitness to travel, the animals should be examined by a *veterinarian*.
- d) Pre-*journey* assembly / holding areas should be designed to:
 - i) securely contain the animals;
 - ii) maintain an environment safe from hazards, including predators and disease;
 - iii) protect animals from exposure to adverse weather conditions;
 - iv) allow for maintenance of social groups; and
 - v) allow for rest, watering and feeding.

2. Selection of compatible groups

Compatible groups should be selected before transport to avoid adverse animal welfare consequences. The following guidelines should be applied when assembling groups of animals:

- a) animals of different species should not be mixed unless they are judged to be compatible;
- b) animals of the same species can be mixed unless there is a significant likelihood of aggression; aggressive individuals should be segregated (recommendations for specific species are described in detail in Article 3.7.2.11.). For some species, animals from different groups should not be mixed because poor welfare occurs unless they have established a social structure;
- c) young or small animals may need to be separated from older or larger animals, with the exception of nursing mothers with young at foot;
- d) animals with horns or antlers should not be mixed with animals lacking horns or antlers, unless judged to be compatible; and
- e) animals reared together should be maintained as a group; animals with a strong social bond, such as a dam and offspring, should be transported together.

3. Fitness to travel

- a) Animals should be inspected by a *veterinarian* or an *animal handler* to assess fitness to travel. If its fitness to travel is in doubt, it is the responsibility of a *veterinarian* to determine its ability to travel. Animals found unfit to travel should not be loaded onto a *vessel*.
- b) Humane and effective arrangements should be made by the owner or agent for the handling and care of any animal rejected as unfit to travel.
- c) Animals that are unfit to travel include, but may not be limited to:
 - i) those that are sick, injured, weak, disabled or fatigued;
 - ii) those that are unable to stand unaided or bear weight on each leg;
 - iii) those that are blind in both eyes;
 - iv) those that cannot be moved without causing them additional suffering;
 - v) newborn with an unhealed navel;
 - vi) females travelling without young which have given birth within the previous 48 hours;
 - vii) pregnant animals which would be in the final 10% of their gestation period at the planned time of *unloading*.
 - viii) animals with unhealed wounds from recent surgical procedures such as dehorning.
- d) Risks during transport can be reduced by selecting animals best suited to the conditions of travel and those that are acclimatised to expected weather conditions.
- e) Animals at particular risk of suffering poor welfare during transport and which require special conditions (such as in the design of facilities and *vehicles*, and the length of the *journey*) and additional attention during transport, may include:
 - i) very large or obese individuals;
 - ii) very young or old animals;
 - iii) excitable or aggressive animals;
 - iv) animals subject to motion sickness;
 - v) animals which have had little contact with humans;

Written Community comment

The point 3 (c) (vi) should be replaced as follows:

"Pregnant animals for which 90% or more of the expected gestation period has already passed or females who have given birth in the previous week."

Justification

Beside a wording that it is easier to verify, it is also important to consider the period after birth where the female is usually weak and can not be considered to be fit for transport.

- vi) females in the last third of pregnancy or in heavy lactation.
- f) Hair or wool length should be considered in relation to the weather conditions expected during transport.

Article 3.7.2.7.

Loading

1. Competent supervision

- a) *Loading* should be carefully planned as it has the potential to be the cause of poor welfare in transported animals.
- b) *Loading* should be supervised by the *Competent Authority* and conducted by *animal handler(s)*. *Animal handlers* should ensure that animals are loaded quietly and without unnecessary noise, harassment or force, and that untrained assistants or spectators do not impede the process.

2. Facilities

- a) The facilities for *loading*, including the collecting area at the wharf, races and loading ramps should be designed and constructed to take into account ~~of~~ the needs and abilities of the animals with regard to dimensions, slopes, surfaces, absence of sharp projections, flooring, sides, etc.
- b) Ventilation during *loading* and the *journey* should provide for fresh air, and the removal of excessive heat, humidity and noxious fumes (such as ammonia and carbon monoxide). Under warm and hot conditions, ventilation should allow for the adequate convective cooling of each animal. In some instances, adequate ventilation can be achieved by increasing the *space allowance* for animals.
- c) *Loading* facilities should be properly illuminated to allow the animals to be easily inspected by *animal handlers*, and to allow the ease of movement of animals at all times. Facilities should provide uniform light levels directly over approaches to sorting pens, chutes, loading ramps, with brighter light levels inside *vehicles/containers*, in order to minimise baulking. Dim light levels may be advantageous for the catching of some animals. Artificial lighting may be required.

3. Goads and other aids

When moving animals, their species specific behaviour should be used (see Article 3.7.2.11.). If goads and other aids are necessary, the following principles should apply:

- a) Animals that have little or no room to move should not be subjected to physical force or goads and other aids which compel movement. Electric goads and prods should only be used in extreme cases and not on a routine basis to move animals. The use and the power output should be restricted to that necessary to assist movement of an animal and only when an animal has a clear path ahead to move. Goads and other aids should not be used repeatedly if the animal fails to respond or move. In such cases it should be investigated whether some physical or other impediment is preventing the animal from moving.
- b) The use of such devices should be limited to battery-powered goads on the hindquarters of pigs and large ruminants, and never on sensitive areas such as the eyes, mouth, ears, anogenital region or belly. Such instruments should not be used on horses, sheep and goats of any age, or on calves or piglets.

- c) Useful and permitted goads include panels, flags, plastic paddles, flappers (a length of cane with a short strap of leather or canvas attached), plastic bags and rattles; they should be used in a manner sufficient to encourage and direct movement of the animals without causing undue stress.
- d) Painful procedures (including whipping, tail twisting, use of nose twitches, pressure on eyes, ears or external genitalia), or the use of goads or other aids which cause pain and suffering (including large sticks, sticks with sharp ends, lengths of metal piping, fencing wire or heavy leather belts), should not be used to move animals.
- e) Excessive shouting at animals or making loud noises (e.g. through the cracking of whips) to encourage them to move should not occur as such actions may make the animals agitated, leading to crowding or falling.
- f) The use of well trained dogs to help with the *loading* of some species may be acceptable.
- g) Animals should be grasped or lifted in a manner which avoids pain or suffering and physical damage (e.g. bruising, fractures, dislocations). In the case of quadrupeds, manual lifting by a person should only be used in young animals or small species, and in a manner appropriate to the species; grasping or lifting animals only by their wool, hair, feathers, feet, neck, ears, tails, head, horns, limbs causing pain or suffering should not be permitted, except in an emergency where animal welfare or human safety may otherwise be compromised.
- h) Conscious animals should not be thrown, dragged or dropped.

Written Community comment

Under point 3 (i) the word "should" should be replaced by "could".

Justification

Performance based standards are useful but not always necessary.

- i) Performance standards should be established in which numerical scoring is used to evaluate the use of such instruments, and to measure the percentage of animals moved with an electric instrument and the percentage of animals slipping or falling as a result of their usage.

Article 3.7.2.8.

Travel

1. General considerations

- a) *Animal handler(s)* should check the consignment immediately before departure to ensure that the animals have been loaded according to the load plan. Each consignment should be checked following any incident or situation likely to affect their welfare and in any case within 12 hours of departure.
- b) If necessary and where possible adjustments should be made to the *stocking density* as appropriate during the *journey*.

- c) Each pen of animals should be observed on a daily basis for normal behaviour, health and welfare, and the correct operation of ventilation, watering and feeding systems. There should also be a night patrol. Any necessary corrective action should be undertaken promptly.
- d) Adequate access to suitable feed and water should be ensured for all animals in each pen.
- e) Where cleaning or *disinfestation* is necessary during travel, it should be carried out with the minimum of stress to the animals.

2. Sick or injured animals

- a) Sick or injured animals should be segregated.
- b) Sick or injured animals should be appropriately treated or humanely killed, in accordance with a predetermined emergency response plan (Article 3.7.2.4.). Veterinary advice should be sought if necessary. All drugs and products should be used according to recommendations from a *veterinarian* and in accordance with the manufacturer's instructions.
- c) A record of treatments carried out and their outcomes should be kept.
- d) When humane killing is necessary, the *animal handler* must ensure that it is carried out humanely. Recommendations for specific species are described in Appendix 3.7.6. on killing of animals for disease control purposes. Veterinary advice regarding the appropriateness of a particular method of euthanasia should be sought as necessary.

Article 3.7.2.9.

Unloading and post-journey handling

1. General considerations

- a) The required facilities and the principles of animal handling detailed in Article 3.7.2.7. apply equally to *unloading*, but consideration should be given to the likelihood that the animals will be fatigued.
- b) *Unloading* should be carefully planned as it has the potential to be the cause of poor welfare in transported animals.
- c) A livestock *vessel* should have priority attention when arriving in port and have priority access to a berth with suitable *unloading* facilities. As soon as possible after the *vessel's* arrival at the port and acceptance of the consignment by the *Competent Authority*, animals should be unloaded into appropriate facilities.
- d) The accompanying veterinary certificate and other documents should meet the requirements of the *importing country*. Veterinary inspections should be completed as quickly as possible.
- e) *Unloading* should be supervised by the *Competent Authority* and conducted by *animal handler(s)*. The *animal handlers* should ensure that animals are unloaded as soon as possible after arrival but sufficient time should be allowed for *unloading* to proceed quietly and without unnecessary noise, harassment or force, and that untrained assistants or spectators do not impede the process.

2. Facilities

- a) The facilities for *unloading* including the collecting area at the wharf, races and unloading ramps should be designed and constructed to take into account of the needs and abilities of the animals with regard to dimensions, slopes, surfaces, absence of sharp projections, flooring, sides, etc.
 - b) All *unloading* facilities should have sufficient lighting to allow the animals to be easily inspected by the *animal handlers*, and to allow the ease of movement of animals at all times.
 - c) There should be facilities to provide animals with appropriate care and comfort, adequate space, access to quality feed and clean drinking water, and shelter from extreme weather conditions.
3. Sick or injured animals
- a) An animal that has become sick, injured or disabled during a *journey* should be appropriately treated or humanely killed (see Appendix 3.7.6.). When necessary, veterinary advice should be sought in the care and treatment of these animals.
 - b) In some cases, where animals are non-ambulatory due to fatigue, injury or sickness, it may be in the best welfare interests of the animal to be treated or humanely killed aboard the *vessel*.
 - c) If *unloading* is in the best welfare interests of animals that are fatigued, injured or sick, there should be appropriate facilities and equipment for the humane *unloading* of such animals. These animals should be unloaded in a manner that causes the least amount of suffering. After *unloading*, separate pens and other appropriate facilities and treatments should be provided for sick or injured animals.
4. Cleaning and disinfection
- a) *Vessels* and *containers* used to carry the animals should be cleaned before re-use through the physical removal of manure and bedding, by scraping, washing and flushing *vessels* and *containers* with water until visibly clean. This should be followed by *disinfection* when there are concerns about disease transmission.
 - b) Manure, litter and bedding should be disposed of in such a way as to prevent the transmission of disease and in compliance with all relevant health and environmental legislation.

Article 3.7.2.10.

Actions in the event of a refusal to allow the importation of a shipment

1. The welfare of the animals should be the first consideration in the event of a refusal to import.
2. When animals have been refused import, the *Competent Authority* of ~~that~~ the *importing country* should make available suitable isolation facilities to allow the *unloading* of animals from a *vessel* and their secure holding, without posing a risk to the health of the national herd, pending resolution of the situation. In this situation, the priorities should be:
 - a) The *Competent Authority* of the *importing country* should provide urgently in writing the reasons for the refusal.
 - b) In the event of a refusal for animal health reasons, the *Competent Authority* of the *importing country* should provide urgent access to an OIE-appointed *veterinarian(s)* to assess the health status of the animals with regard to the concerns of the *importing country*, and the necessary facilities and approvals to expedite the required diagnostic testing.
 - c) The *Competent Authority* of the *importing country* should provide access to allow continued assessment of the ongoing health and welfare situation.

- d) If the matter cannot be promptly resolved, the *Competent Authority* of the *exporting* and *importing countries* should call on the OIE to mediate.
3. In the event that the animals are required to remain on the *vessel*, the priorities should be:
- a) The *Competent Authority* of the *importing country* should allow provisioning of the *vessel* with water and feed as necessary.
 - b) The *Competent Authority* of the *importing country* should provide urgently in writing the reasons for the refusal.
 - c) In the event of a refusal for animal health reasons, the *Competent Authority* of the *importing country* should provide urgent access to an OIE-appointed *veterinarian(s)* to assess the health status of the animals with regard to the concerns of the *importing country*, and the necessary facilities and approvals to expedite the required diagnostic testing.
 - d) The *Competent Authority* of the *importing country* should provide access to allow continued assessment of the ongoing health and other aspects of the welfare of the animals, and the necessary actions to deal with any issues which arise.
 - e) If the matter cannot be urgently resolved, the *Competent Authorities* of the *exporting* and *importing countries* should call on the OIE to mediate.
4. The OIE should utilise its dispute settlement mechanism to identify a mutually agreed solution which will address the animal health and welfare issues in a timely manner.

Article 3.7.2.11.

Species specific issues

Camelids of the new world in this context comprise llamas, alpacas, guanaco and vicuna. They have good eyesight and, like sheep, can negotiate steep slopes, though ramps should be as shallow as possible. They load most easily in a bunch as a single animal will strive to rejoin the others. Whilst they are usually docile, they have an unnerving habit of spitting in self-defence. During transport, they usually lie down. They frequently extend their front legs forward when lying, so gaps below partitions should be high enough so that their legs are not trapped when the animals rise.

Cattle are sociable animals and may become agitated if they are singled out. Social order is usually established at about two years of age. When groups are mixed, social order has to be re-established and aggression may occur until a new order is established. Crowding of cattle may also increase aggression as the animals try to maintain personal space. Social behaviour varies with age, breed and sex; *Bos indicus* and *B. indicus*-cross animals are usually more temperamental than European breeds. Young bulls, when moved in groups, show a degree of playfulness (pushing and shoving) but become more aggressive and territorial with age. Adult bulls have a minimum personal space of six square metres. Cows with young calves can be very protective, and handling calves in the presence of their mothers can be dangerous. Cattle tend to avoid “dead end” in passages.

Goats should be handled calmly and are more easily led or driven than if they are excited. When goats are moved, their gregarious tendencies should be exploited. Activities which frighten, injure or cause agitation

to animals should be avoided. Bullying is particularly serious in goats. Housing strange goats together could result in fatalities, either through physical violence, or subordinate goats being refused access to food and water.

Horses in this context include all solipeds, donkeys, mules, hinnies and zebra. They have good eyesight and a very wide angle of vision. They may have a history of *loading* resulting in good or bad experiences. Good training should result in easier *loading*, but some horses can prove difficult, especially if they are inexperienced or have associated *loading* with poor transport conditions. In these circumstances, two experienced *animal handlers* can load an animal by linking arms or using a strop below its rump. Blindfolding may even be considered. Ramps should be as shallow as possible. Steps are not usually a problem when horses mount a ramp, but they tend to jump a step when descending, so steps should be as low as possible. Horses benefit from being individually stalled, but may be transported in compatible groups. When horses are to travel in groups, their shoes should be removed.

Pigs have poor eyesight, and may move reluctantly in unfamiliar surroundings. They benefit from well lit *loading* bays. Since they negotiate ramps with difficulty, these should be as level as possible and provided with secure footholds. Ideally, a hydraulic lift should be used for greater heights. Pigs also negotiate steps with difficulty. A good ‘rule-of-thumb’ is that no step should be higher than the pig’s front knee. Serious aggression may result if unfamiliar animals are mixed. Pigs are highly susceptible to heat stress.

Sheep are sociable animals with good eyesight and tend to “flock together”, especially when they are agitated. They should be handled calmly and their tendency to follow each other should be exploited when they are being moved. Sheep may become agitated if they are singled out for attention and will strive to rejoin the group. Activities which frighten, injure or cause agitation to sheep should be avoided. They can negotiate steep ramps.

— text deleted

APPENDIX 3.7.3.

GUIDELINES FOR THE TRANSPORT OF ANIMALS BY LAND

Community comments:

The Community thanks the OiE Code Commission for its work that improves the clarity and applicability of the Guidelines. However, it wishes that some minor but important amendments indicated below are taken on board.

Preamble: These guidelines apply to the following live domesticated animals: cattle, buffalo, camels, sheep, goats, pigs, poultry and equines. They will also be largely applicable to some other animals (e.g., deer, other camelids and ratites). Wild, feral and partly domesticated animals may need different conditions.

Article 3.7.3.1.

The amount of time animals spend on a *journey* should be kept to the minimum.

Article 3.7.3.1. bis

1. Animal behaviour

Animal handlers should be experienced and competent in handling and moving farm livestock and understand the behaviour patterns of animals and the underlying principles necessary to carry out their tasks.

The behaviour of individual animals or groups of animals will vary, depending on their breed, sex, temperament and age and the way in which they have been reared and handled. Despite these differences, the following behaviour patterns which are always present to some degree in domestic animals, should be taken into consideration in handling and moving the animals.

Most domestic livestock are kept in herds and follow a leader by instinct.

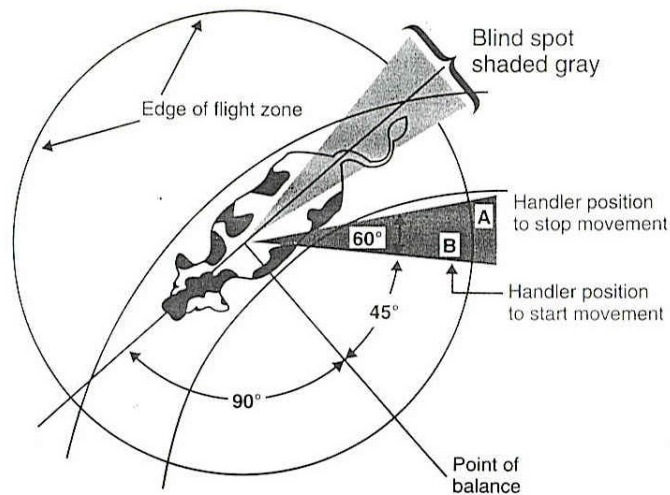
Animals which are likely to harm each other in a group situation should not be mixed.

The desire of some animals to control their personal space should be taken into account in designing *loading* and *unloading* facilities, transport *vehicles* and *containers*.

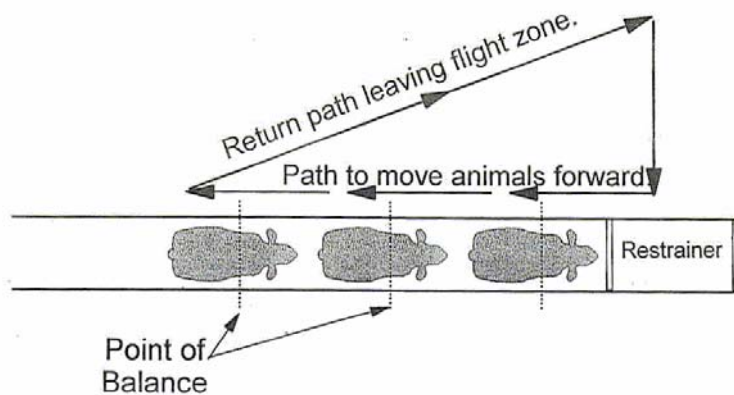
Domestic animals will try to escape if any person approaches closer than a certain distance. This critical distance, which defines the flight zone, varies among species and individuals of the same species, and depends upon previous contact with humans. Animals reared in close proximity to humans (i.e. tame) have a smaller flight zone, whereas those kept in free range or extensive systems

may have flight zones which may vary from one metre to many metres. *Animal handlers* should avoid sudden penetration of the flight zone which may cause a panic reaction which could lead to aggression or attempted escape.

An example of a flight zone (cattle)



Animal handler movement pattern to move cattle forward



Animal handlers should use the point of balance at the animal's shoulder to move animals, adopting a position behind the point of balance to move an animal forward and in front of the point of balance to move it backward.

Domestic animals have wide-angle vision but only have limited forward binocular vision and poor perception of depth. This means that they can detect objects and movements beside and behind them, but can only judge distances directly ahead.

Although all domestic animals have a highly sensitive sense of smell, they may react differently to the smells encountered during travel. Smells which cause fear or other negative responses should be taken into consideration when managing animals.

Domestic animals can hear over a greater range of frequencies than humans and are more sensitive to higher frequencies. They tend to be alarmed by constant loud noise and by sudden noises, which may cause them to panic. Sensitivity to such noises should also be taken into account when handling animals.

2. Distractions and their removal

Distractions that may cause approaching animals to stop, baulk or turn back should be designed out from new *loading* and *unloading* facilities or removed from existing ones. Below are examples of common distractions and methods for eliminating them:

- a) reflections on shiny metal or wet floors - move a lamp or change lighting;
- b) dark entrances - illuminate with indirect lighting which does not shine directly into the eyes of approaching animals;
- c) animals seeing moving people or equipment up ahead - install solid sides on chutes and races or install shields;
- d) dead ends-avoid if possible by curving the passage, or make an illusory passage;
- e) chains or other loose objects hanging in chutes or on fences - remove them;
- f) uneven floors or a sudden drop in floor levels – avoid uneven floor surfaces or install a solid false floor to provide an illusion of a solid and continuous walking surface;
- g) sounds of air hissing from pneumatic equipment - install silencers or use hydraulic equipment or vent high pressure to the external environment using flexible hosing;
- h) clanging and banging of metal objects - install rubber stops on gates and other devices to reduce metal to metal contact;
- i) air currents from fans or air curtains blowing into the face of animals - redirect or reposition equipment.

Article 3.7.3.2.

Responsibilities

Once the decision to transport the animals has been made, the welfare of the animals during their *journey* is the paramount consideration and is the joint responsibility of all people involved. The individual responsibilities of persons involved will be described in more detail in this Article.

The roles of each of those responsible are defined below:

1. The owners and managers of the animals are responsible for:
 - a) the general health, overall welfare and fitness of the animals for the *journey*;
 - b) ensuring compliance with any required veterinary or other certification;
 - c) the presence of an *animal handler* competent for the species being transported during the *journey* with the authority to take prompt action; in case of transport by individual trucks, the truck driver may be the sole *animal handler* during the *journey*;
 - d) the presence of an adequate number of *animal handlers* during *loading* and *unloading*;
 - e) ensuring that equipment and veterinary assistance are provided as appropriate for the species and the *journey*.

2. Business agents or buying/selling agents are responsible for:
 - a) selection of animals that are fit to travel;
 - b) availability of suitable facilities at the start and at the end of the *journey* for the assembly; *loading*, transport, *unloading* and holding of animals, including for any stops at *resting points* during the *journey* and for emergencies.
3. Animal handlers are responsible for the humane handling and care of the animals, especially during *loading* and *unloading*, and for maintaining a journey log. To carry out their responsibilities, they should have the authority to take prompt action. In the absence of a separate *animal handler*, the driver is the *animal handler*.
4. Transport companies, *vehicle* owners and drivers are responsible for planning the *journey* to ensure the care of the animals; in particular they are responsible for:
 - a) choosing appropriate *vehicles* for the species transported and the *journey*;
 - b) ensuring that properly trained staff are available for *loading* / *unloading* of animals;
 - c) ensuring adequate competency of the driver in matters of animal welfare for the species being transported in case a separate *animal handler* is not assigned to the truck;
 - d) developing and keeping up-to-date contingency plans to address emergencies (including adverse weather conditions) and minimise stress during transport;
 - e) producing a *journey* plan which includes a *loading* plan, *journey* duration, itinerary and location of resting places;
 - f) *loading* only those animals which are fit to travel, for their correct *loading* into the *vehicle* and their inspection during the *journey*, and for appropriate responses to problems arising. If its fitness to travel is in doubt, the animal should be examined by a *veterinarian* in accordance with point 5 a) of Article 3.7.3.6;
 - g) welfare of the animals during the actual transport.
5. Managers of facilities at the start and at the end of the *journey* and at *resting points* are responsible for:
 - a) providing suitable premises for *loading*, *unloading* and securely holding the animals, with water and feed when required, until further transport, sale or other use (including rearing or slaughter);
 - b) providing an adequate number of *animal handlers* to load, unload, drive and hold animals in a manner that causes minimum stress and injury; in the absence of a separate *animal handler*, the driver is the *animal handler*.
 - c) minimising the opportunities for disease transmission;
 - d) providing appropriate facilities, with water and feed when required;
 - e) providing appropriate facilities for emergencies;
 - f) providing facilities for washing and disinfecting *vehicles* after *unloading*;
 - g) providing facilities and competent staff to allow the humane killing of animals when required
 - h) ensuring proper rest times and minimal delay during stops.

6. The responsibilities of *Competent Authorities* include:
- establishing minimum standards for animal welfare, including requirements for inspection of animals before, during and after their travel, defining 'fitness to travel' and appropriate certification and record keeping;
 - setting standards for facilities, *containers* and *vehicles* for the transport of animals;
 - setting standards for the competence of *animal handlers*, drivers and managers of facilities in relevant issues in animal welfare;
 - ensuring appropriate awareness and training of *animal handlers*, drivers and managers of facilities in relevant issues in animal welfare;
 - implementation of the standards, including through accreditation of / interaction with other organisations;

Written Community comment

The part of the sentence under point 6 (f) "...and other aspects of welfare." should be kept.

Justification

Animal welfare is part of the responsibilities of the competent authorities.

- monitoring and evaluating the effectiveness of standards of health ~~and other aspects of welfare;~~
 - monitoring and evaluating the use of veterinary medications;
 - giving animal consignments priority at frontiers in order to allow them to pass without unnecessary delay.
7. All individuals, including *veterinarians*, involved in transporting animals and the associated handling procedures should receive appropriate training and be competent to meet their responsibilities.
8. The receiving *Competent Authority* should report back to the sending *Competent Authority* on significant animal welfare problems which occurred during the *journey*.

Article 3.7.3.3.

Competence

- All people responsible for animals during *journeys*, should be competent according to their responsibilities listed in Article 3.7.3.2. Competence may be gained through formal training and/or practical experience.
- The assessment of the competence of *animal handlers* should at a minimum address knowledge, and ability to apply that knowledge, in the following areas:

Written Community comment

Under point 2 (a), the wording "planning the journey" should be replaced by "maintaining a journey log".

Justification

The planning of the journey is under the responsibility of transport companies, while animal handlers are responsible for maintaining the records of the journey.

- a) planning a *journey*, including appropriate *space allowance*, and feed, water and ventilation requirements;
- b) responsibilities for animals during the *journey*, including *loading* and *unloading*;
- c) sources of advice and assistance;
- d) animal behaviour, general signs of disease, and indicators of poor animal welfare such as stress, pain and fatigue, and their alleviation;
- e) assessment of fitness to travel; if fitness to travel is in doubt, the animal should be examined by a *veterinarian*;
- f) relevant authorities and applicable transport regulations, and associated documentation requirements;
- g) general disease prevention procedures, including cleaning and *disinfection*;
- h) appropriate methods of animal handling during transport and associated activities such as assembling, *loading*, and *unloading*;
- i) methods of inspecting animals, managing situations frequently encountered during transport such as adverse weather conditions, and dealing with emergencies, including humane killing;
- j) species-specific aspects and age-specific aspects of animal handling and care, including feeding, watering and inspection; and
- k) maintaining a *journey* log and other records.

Article 3.7.3.4.

Planning the journey

1. General considerations

- a) Adequate planning is a key factor affecting the welfare of animals during a *journey*.
- b) Before the *journey* starts, plans should be made in relation to:
 - i) preparation of animals for the *journey*;
 - ii) choice of road, rail roll-on roll-off *vessels* or *containers*;
 - iii) nature and duration of the *journey*;
 - iv) *vehicle/ container* design and maintenance, including roll-on roll-off *vessels*;
 - v) required documentation;
 - vi) *space allowance*;
 - vii) rest, water and feed;

- viii) observation of animals en route;
 - ix) control of disease;
 - x) emergency response procedures;
 - xi) forecast weather conditions (e.g. conditions being too hot or too cold to travel during certain periods of the day);
 - xii) transfer time when changing mode of transport, and
 - xiii) waiting time at frontiers and inspection points.
- c) Regulations concerning drivers (for example, maximum driving periods) should take into account animal welfare whenever is possible.

2. Preparation of animals for the journey

Written Community comment

Under the point 2 (a) the following text should be added:

"For all animals it is extra important that the rest stops during long journeys are long enough to fulfil the needs of the animals of feed and water".

Justification

When the vehicle is moving animals are not in position to drink or eat. Enough time is necessary to allow them to perform this behaviour.

- a) When animals are to be provided with a novel diet or method of water provision during transport, an adequate period of adaptation should be planned. Species-specific short period of feed deprivation prior to *loading* may be desirable.
- b) Animals more accustomed to contact with humans and with being handled are likely to be less fearful of being loaded and transported. *Animal handlers* should handle and load animals in a manner that reduces their fearfulness and improves their approachability.

Written Community comment

Under point 2 (c) in the first line, the text "(such as tranquillisers) or other medication" should be replaced by "(such as tranquillisers or other medications)"

Justification

Other medication may be justified (e.g. treatment of external parasites) and required for welfare or animal health reasons by the country of destination.

- c) Behaviour-modifying compounds (such as tranquillisers) or other medication should not be used routinely during transport. Such compounds should only be administered when a problem exists in an individual animal, and should be administered by a *veterinarian* or other person who has been instructed in their use by a *veterinarian*.

3. Nature and duration of the journey

The maximum duration of a *journey* should be determined taking into account factors such as:

- a) the ability of the animals to cope with the stress of transport (such as very young, old, lactating or pregnant animals);
- b) the previous transport experience of the animals;
- c) the likely onset of fatigue;
- d) the need for special attention;
- e) the need for feed and water;
- f) the increased susceptibility to injury and disease;
- g) *space allowance*, *vehicle* design, road conditions and driving quality;
- h) weather conditions;
- i) *vehicle* type used, terrain to be traversed, road surfaces and quality, skill and experience of the driver.

4. Vehicle and container design and maintenance

- a) *Vehicles* and *containers* used for the transport of animals should be designed, constructed and fitted as appropriate for the species, size and weight of the animals to be transported. Special attention should be paid to avoid injury to animals through the use of secure smooth fittings free from sharp protrusions. The avoidance of injury to drivers, and *animal handlers* while carrying out their responsibilities should be emphasised.
- b) *Vehicles* and *containers* should be designed with the structures necessary to provide protection from adverse weather conditions and to minimise the opportunity for animals to escape.
- c) In order to minimise the likelihood of the spread of infectious disease during transport, *vehicles* and *containers* should be designed to permit thorough cleaning and *disinfection*, and the containment of faeces and urine during a *journey*.
- d) *Vehicles* and *containers* should be maintained in good mechanical and structural condition.
- e) *Vehicles* and *containers* should have adequate ventilation to meet variations in climate and the thermo-regulatory needs of the animal species being transported; the ventilation system (natural or mechanical) should be effective when the *vehicle* is stationary, and the airflow should be adjustable.
- f) *Vehicles* should be designed so that the faeces or urine from animals on upper levels do not soil animals on lower levels, nor their feed and water.
- g) When *vehicles* are carried on board ferries, facilities for adequately securing them should be available.
- h) If feeding or watering while the *vehicle* is moving is required, adequate facilities on the *vehicle* should be available.
- i) When appropriate, suitable bedding should be added to *vehicle* floors to assist absorption of urine and faeces, to minimise slipping by animals, and protect animals (especially young animals) from hard flooring surfaces and adverse weather conditions.

5. Special provisions for transport in vehicles (road and rail) on roll-on/roll-off vessels or for containers
- a) *Vehicles* and *containers* should be equipped with a sufficient number of adequately designed, positioned and maintained securing points enabling them to be securely fastened to the *vessel*.
 - b) *Vehicles* and *containers* should be secured to the *vessel* before the start of the sea *journey* to prevent them being displaced by the motion of the *vessel*.
 - c) Roll-on/roll-off *vessels* should have adequate ventilation to meet variations in climate and the thermo-regulatory needs of the animal species being transported, especially where the animals are transported in a secondary *vehicle/container* on enclosed decks.
6. Space allowance
- a) The number of animals which should be transported on a *vehicle* or in a *container* and their allocation to compartments should be determined before *loading*.
 - b) The space required on a *vehicle* or in a *container* depends upon whether or not the animals need to lie down (for example, pigs, camels and poultry), or to stand (horses). Animals which will need to lie down often stand when first loaded or when the *vehicle* is driven with too much lateral movement or sudden braking.
 - c) When animals lie down, they should all be able to adopt a normal lying posture which allows necessary thermoregulation.
 - d) When animals are standing, they should have sufficient space to adopt a balanced position as appropriate to the climate and species transported.
 - e) The amount of headroom necessary depends on the species of animal. Each animal should be able to assume its natural position for transport (including during *loading* and *unloading*) without coming into contact with the roof or upper deck of the *vehicle*, and there should be sufficient headroom to allow adequate airflow over the animals.
 - f) Calculations for the *space allowance* for each animal should be carried out using the figures given in a relevant national or international document. The number and size of pens on the *vehicle* should be varied to where possible accommodate already established groups of animals while avoiding group sizes which are too large.
 - g) Other factors which may influence *space allowance* include:
 - i) *vehicle/container* design;
 - ii) length of *journey*;
 - iii) need to provide feed and water on the *vehicle*;
 - iv) quality of roads;
 - v) expected weather conditions;
 - vi) category and sex of the animals.
7. Rest, water and feed
- a) Suitable water and feed should be available as appropriate and needed for the species, age, and condition of the animals, as well as the duration of the *journey*, climatic conditions, etc.

- b) Animals should be allowed to rest at *resting points* at appropriate intervals during the *journey*. The type of transport, the age and species of the animals being transported, and climatic conditions should determine the frequency of rest stops and whether the animals should be unloaded. Water and feed should be available during rest stops.

8. Ability to observe animals during the *journey*

- a) Animals should be positioned to enable each animal to be observed regularly during the *journey* to ensure their safety and good welfare.
- b) If the animals are in crates or on multi-tiered *vehicles* which do not allow free access for observation, for example where the roof of the tier is too low animals cannot be inspected adequately, and serious injury or disease could go undetected. In these circumstances, a shorter *journey* duration should be allowed, and the maximum duration will vary according to the rate at which problems arise in the species and under the conditions of transport.

9. Control of disease

As animal transport is often a significant factor in the spread of infectious diseases, *journey* planning should take the following into account:

- a) mixing of animals from different sources in a single consignment should be minimised;
- b) contact at *resting points* between animals from different sources should be avoided;
- c) when possible, animals should be vaccinated against diseases to which they are likely to be exposed at their destination;

Written Community comment

Under point 9 (d) the words "exporting or" should be added before the words "importing country".

Justification

It is hardly possible to be aware of all medicine registration and licensing procedures in countries around the world and the exported animals may have been treated before export not knowing their destination. The medications should of course be approved in the exporting country.

- d) medications used prophylactically or therapeutically should be approved by the *Veterinary Authority* of the *importing country* and should only be administered by a *veterinarian* or other person who has been instructed in their use by a *veterinarian*.

10. Emergency response procedures

There should be an emergency management plan that identifies the important adverse events that may be encountered during the *journey*, the procedures for managing each event and the action to be taken in an emergency. For each important event, the plan should document the actions to be undertaken and the responsibilities of all parties involved, including communications and record keeping.

11. Other considerations

- a) Extreme weather conditions are hazardous for animals undergoing transport and require appropriate *vehicle* design to minimise risks. Special precautions should be taken for animals that

have not been acclimatised or which are unsuited to either hot or cold conditions. In some extreme conditions of heat or cold, animals should not be transported at all.

- b) In some circumstances, transportation during the night may reduce thermal stress or the adverse effects of other external stimuli.

Article 3.7.3.5.

Documentation

1. Animals should not be loaded until the documentation required to that point is complete.
2. The documentation accompanying the consignment should include:
 - a) *journey* travel plan and an emergency management plan;
 - b) date, time, and place of *loading* and *unloading*;
 - c) veterinary certification, when required;
 - [d) animal welfare competencies of the driver; (under study)]
 - e) *animal identification* to allow *animal traceability* to the premises of departure and, where possible, to the premises of origin;
 - f) details of any animals considered at particular risk of suffering poor welfare during transport (point 3e) of Article 3.7.3.6.);
 - g) documentation of the period of rest, and access to feed and water, prior to the *journey*;
 - h) *stocking density* estimate for each load in the consignment;
 - i) the *journey* log - daily record of inspection and important events, including records of morbidity and mortality and actions taken, climatic conditions, rest stops, travel time and distance, feed and water offered and estimates of consumption, medication provided, and mechanical defects.
3. When veterinary certification is required to accompany consignments of animals, it should address:
 - a) fitness of animals to travel;
 - b) *animal identification* (description, number, etc.);
 - c) health status including any tests, treatments and vaccinations carried out;
 - d) when required, details of *disinfection* carried out.

At the time of certification, the *veterinarian* should notify *animal handler* or the driver of any factors affecting the fitness of animals to travel for a particular *journey*.

Article 3.7.3.6.

Pre-journey period

1. General considerations

- a) Pre-*journey* rest is necessary if the welfare of animals has become poor during the collection period because of the physical environment or the social behaviour of the animals. The need for rest should be judged by a *veterinarian* or other competent person.
- b) Pre-*journey* assembly/holding areas should be designed to:
 - i) securely hold the animals;
 - ii) maintain a safe environment from hazards, including predators and disease;
 - iii) protect animals from exposure to severe weather conditions;
 - iv) allow for maintenance of social groups;
 - v) allow for rest, and appropriate water and feed;
- c) Consideration should be given to the previous transport experience, training and conditioning of the animals, if known, as these may reduce fear and stress in animals.
- d) Feed and water should be provided pre-*journey* if the *journey* duration is greater than the normal inter-feeding and drinking interval for the animal. Recommendations for specific species are described in detail in Article 3.7.3.11.
- e) When animals are to be provided with a novel diet or method of feed or water provision during the *journey*, an adequate period of adaptation should be allowed.

Written Community comment

In point 1 (f) the words "and risk" should be added between "minimum stress" and "to the animals".

Justification

Cleaning can also be a risk for the animals (e.g. gear and chemicals).

- f) Before each *journey*, *vehicles* and *containers* should be thoroughly cleaned and, if necessary, treated for animal health and public health purposes, using methods approved by the *Competent Authority*. When cleaning is necessary during a *journey*, this should be carried out with the minimum of stress to the animals.
- g) Where an *animal handler* believes that there is a significant risk of disease among the animals to be loaded or significant doubt as to their fitness to travel, the animals should be examined by a *veterinarian*.

2. Selection of compatible groups

Compatible groups should be selected before transport to avoid adverse animal welfare consequences. The following guidelines should be applied when assembling groups of animals:

- a) Animals reared together should be maintained as a group; animals with a strong social bond, such as a dam and offspring, should be transported together.
- b) Animals of the same species can be mixed unless there is a significant likelihood of aggression; aggressive individuals should be segregated (recommendations for specific species are described in detail in Article 3.7.3.11.). For some species, animals from different groups should not be mixed because poor welfare occurs unless they have established a social structure.
- c) Young or small animals should be separated from older or larger animals, with the exception of nursing mothers with young at foot.

- d) Animals with horns or antlers should not be mixed with animals lacking horns or antlers unless judged to be compatible.
- e) Animals of different species should not be mixed unless they are judged to be compatible.

3. Fitness to travel

- a) Each animal should be inspected by a *veterinarian* or an *animal handler* to assess fitness to travel. If its fitness to travel is in doubt, the animal should be examined by a *veterinarian*. Animals found unfit to travel should not be loaded onto a *vehicle*, except for transport to receive veterinary treatment.
- b) Humane and effective arrangements should be made by the owner and the agent for the handling and care of any animal rejected as unfit to travel.
- c) Animals that are unfit to travel include, but may not be limited to:
 - i) those that are sick, injured, weak, disabled or fatigued;
 - ii) those that are unable to stand unaided and bear weight on each leg;
 - iii) those that are blind in both eyes;
 - iv) those that cannot be moved without causing them additional suffering;
 - v) newborn with an unhealed navel;

Written Community comment

The point 3 (c) (vii) should be replaced by the following text:

"Pregnant animals for which 90% or more of the expected gestation period has already passed or females who have given birth in the previous week."

Justification

This wording also includes the week after the female has given birth where she can not be considered as fit for transport.

- vi) pregnant animals which would be in the final 10% of their gestation period at the planned time of *unloading*;
- vii) females travelling without young which have given birth within the previous 48 hours;
- viii) those whose body condition would result in poor welfare because of the expected climatic conditions.
- d) Risks during transport can be reduced by selecting animals best suited to the conditions of travel and those that are acclimatised to expected weather conditions.
- e) Animals at particular risk of suffering poor welfare during transport and which require special conditions (such as in the design of facilities and *vehicles*, and the length of the *journey*) and additional attention during transport, may include:
 - i) large or obese individuals;

- ii) very young or old animals;
- iii) excitable or aggressive animals;
- iv) animals which have had little contact with humans;
- v) animal subject to motion sickness;
- vi) females in late pregnancy or heavy lactation, dam and offspring;
- vii) animals with a history of exposure to stressors or pathogenic agents prior to transport;
- viii) animals with unhealed wounds from recent surgical procedures such as dehorning.

4. Specific species requirements

Transport procedures should be able to take account of variations in the behaviour of the species. Flight zones, social interactions and other behaviour vary significantly among species and even within species. Facilities and handling procedures that are successful with one species are often ineffective or dangerous with another.

Recommendations for specific species are described in detail in Article 3.7.3.11.

Article 3.7.3.7.

Loading

1. Competent supervision

- a) *Loading* should be carefully planned as it has the potential to be the cause of poor welfare in transported animals.
- b) *Loading* should be supervised and/or conducted by *animal handlers*. The animals are to be loaded quietly and without unnecessary noise, harassment or force. Untrained assistants or spectators should not impede the process.
- c) When *containers* are loaded onto a *vehicle*, this should be carried out in such a way to avoid poor animal welfare.

2. Facilities

- a) The facilities for *loading* including the collecting area, races and loading ramps should be designed and constructed to take into account the needs and abilities of the animals with regard to dimensions, slopes, surfaces, absence of sharp projections, flooring, etc.
- b) *Loading* facilities should be properly illuminated to allow the animals to be observed by *animal handler(s)*, and to allow the ease of movement of the animals at all times. Facilities should provide uniform light levels directly over approaches to sorting pens, chutes, loading ramps, with brighter light levels inside *vehicles/containers*, in order to minimise baulking. Dim light levels may be advantageous for the catching of poultry and some other animals. Artificial lighting may be required.

- c) Ventilation during *loading* and the *journey* should provide for fresh air, the removal of excessive heat, humidity and noxious fumes (such as ammonia and carbon monoxide), and the prevention of accumulations of ammonia and carbon dioxide. Under warm and hot conditions, ventilation should allow for the adequate convective cooling of each animal. In some instances, adequate ventilation can be achieved by increasing the *space allowance* for animals.

3. Goads and other aids

When moving animals, their species specific behaviour should be used (see Article 3.7.3.11). If goads and other aids are necessary, the following principles should apply:

- a) Animals that have little or no room to move should not be subjected to physical force or goads and other aids which compel movement. Electric goads and prods should only be used in extreme cases and not on a routine basis to move animals. The use and the power output should be restricted to that necessary to assist movement of an animal and only when an animal has a clear path ahead to move. Goads and other aids should not be used repeatedly if the animal fails to respond or move. In such cases it should be investigated whether some physical or other impediment is preventing the animal from moving.
- b) The use of such devices should be limited to battery-powered goads on the hindquarters of pigs and large ruminants, and never on sensitive areas such as the eyes, mouth, ears, anogenital region or belly. Such instruments should not be used on horses, sheep and goats of any age, or on calves or piglets.
- c) Useful and permitted goads include panels, flags, plastic paddles, flappers (a length of cane with a short strap of leather or canvas attached), plastic bags and rattles; they should be used in a manner sufficient to encourage and direct movement of the animals without causing undue stress.
- d) Painful procedures (including whipping, tail twisting, use of nose twitches, pressure on eyes, ears or external genitalia), or the use of goads or other aids which cause pain and suffering (including large sticks, sticks with sharp ends, lengths of metal piping, fencing wire or heavy leather belts), should not be used to move animals.
- e) Excessive shouting at animals or making loud noises (e.g., through the cracking of whips) to encourage them to move should not occur, as such actions may make the animals agitated, leading to crowding or falling.
- f) The use of well trained dogs to help with the *loading* of some species may be acceptable.
- g) Animals should be grasped or lifted in a manner which avoids pain or suffering and physical damage (e.g. bruising, fractures, dislocations). In the case of quadrupeds, manual lifting by a person should only be used in young animals or small species, and in a manner appropriate to the species; grasping or lifting animals only by their wool, hair, feathers, feet, neck, ears, tails, head, horns, limbs causing pain or suffering should not be permitted, except in an emergency where animal welfare or human safety may otherwise be compromised.
- h) Conscious animals should not be thrown, dragged or dropped.

Writtent Community comment

In point (i) the word "should" should be replaced by "could".

Justification

Performance based standards are useful but not always necessary.

- i) Performance standards should be established in which numerical scoring is used to evaluate the use of such instruments, and to measure the percentage of animals moved with an electric instrument and the percentage of animals slipping or falling as a result of their usage.

Article 3.7.3.8.

Travel

1. General considerations

- a) Drivers and *animal handlers* should check the load immediately before departure to ensure that the animals have been properly loaded. Each load should be checked again early in the trip and adjustments made as appropriate. Periodic checks should be made throughout the trip, especially at rest or refuelling stops or during meal breaks when the *vehicle* is stationary.
- b) Drivers should utilise smooth, defensive driving techniques, without sudden turns or stops, to minimise uncontrolled movements of the animals.

2. Methods of restraining or containing animals

- a) Methods of restraining animals should be appropriate to the species and age of animals involved and the training of the individual animal.
- b) Recommendations for specific species are described in detail in Article 3.7.3.11.

3. Regulating the environment within vehicles or containers

- a) Animals should be protected against harm from hot or cold conditions during travel. Effective ventilation procedures for maintaining the environment within *vehicles* or *containers* will vary according to whether conditions are cold, hot and dry or hot and humid, but in all conditions a build-up of noxious gases should be prevented.
- b) The environment within *vehicles* or *containers* in hot and warm weather can be regulated by the flow of air produced by the movement of the *vehicle*. In warm and hot weather, the duration of *journey* stops should be minimised and *vehicles* should be parked under shade, with adequate and appropriate ventilation.
- c) To minimise slipping and soiling, and maintain a healthy environment, urine and faeces should be removed from floors when necessary and disposed of in such a way as to prevent the transmission of disease and in compliance with all relevant health and environmental legislation.

4. Sick, injured or dead animals

- a) A driver or *animal handler* finding sick, injured or dead animals should act according to a predetermined emergency response plan.
- b) Sick or injured animals should be segregated.
- c) Ferries (roll-on roll-off) should have procedures to treat sick or injured animals during the *journey*.

- d) In order to reduce the likelihood that animal transport will increase the spread of infectious disease, contact between transported animals, or the waste products of the transported animals, and other farm animals should be minimised.
 - e) During the *journey*, when disposal of a dead animal becomes necessary, this should be carried out in such a way as to prevent the transmission of disease and in compliance with all relevant health and environmental legislation.
 - f) When killing is necessary, it should be carried out as quickly as possible and assistance should be sought from a *veterinarian* or other person(s) competent in humane killing procedures. Recommendations for specific species are described in Appendix 3.7.6. on killing of animals for disease control purposes.
5. Water and feed requirements
- a) If *journey* duration is such that feeding or watering is required or if the species requires feed or water throughout, access to suitable feed and water for all the animals (appropriate for their species and age) carried in the *vehicle* should be provided. There should be adequate space for all animals to move to the feed and water sources and due account taken of likely competition for feed.
 - b) Recommendations for specific species are described in detail in Article 3.7.3.11.
6. Rest periods and conditions including hygiene
- a) Animals that are being transported should be rested at appropriate intervals during the *journey* and offered feed and water, either on the *vehicle* or, if necessary, unloaded into suitable facilities.
 - b) Suitable facilities should be used en route, when resting requires the *unloading* of the animals. These facilities should meet the needs of the particular animal species and should allow access of all animals to feed and water.
7. In-transit observations
- a) Animals being transported by road should be observed soon after a *journey* is commenced and whenever the driver has a rest. After meal breaks and refuelling stops, the animals should be observed immediately prior to departure.
 - b) Animals being transported by rail should be observed at each scheduled stop. The responsible rail transporter should monitor the progress of trains carrying animals and take all appropriate action to minimise delays.
 - c) During stops, it should be ensured that the animals continue to be properly confined, have appropriate feed and water, and their physical condition is satisfactory.

Article 3.7.3.9.

Unloading and post-journey handling

1. General considerations
- a) The required facilities and the principles of animal handling detailed in Article 3.7.3.7. apply equally to *unloading*, but consideration should be given to the likelihood that the animals will be fatigued.
 - b) *Unloading* should be supervised and/or conducted by an *animal handler* with knowledge and experience of the behavioural and physical characteristics of the species being unloaded.

Animals should be unloaded from the *vehicle* into appropriate facilities as soon as possible after arrival at the destination but sufficient time should be allowed for *unloading* to proceed quietly and without unnecessary noise, harassment or force.

- c) Facilities should provide all animals with appropriate care and comfort, adequate space and ventilation, access to feed (if appropriate) and water, and shelter from extreme weather conditions.
- d) For details regarding the *unloading* of animals at a *slaughterhouse*, see Appendix 3.7.5. on slaughter of animals for human consumption.

2. Sick or injured animals

- a) An animal that has become sick, injured or disabled during a *journey* should be appropriately treated or humanely killed (see Appendix 3.7.6. on killing of animals for disease control purposes). If necessary, veterinary advice should be sought in the care and treatment of these animals. In some cases, where animals are non-ambulatory due to fatigue, injury or sickness, it may be in the best welfare interests of the animal to be treated or killed aboard the *vehicle*. Assistance should be sought from a *veterinarian* or other person(s) competent in humane killing procedures.
- b) At the destination, the *animal handler* or the driver during transit should ensure that responsibility for the welfare of sick, injured or disabled animals is transferred to a veterinarian or other suitable person.
- c) If treatment or humane killing is not possible aboard the *vehicle*, there should be appropriate facilities and equipment for the humane *unloading* of animals that are non-ambulatory due to fatigue, injury or sickness. These animals should be unloaded in a manner that causes the least amount of suffering. After *unloading*, separate pens and other appropriate facilities should be available for sick or injured animals.
- d) Feed, if appropriate, and water should be available for each sick or injured animal.

3. Addressing disease risks

The following should be taken into account in addressing the greater risk of disease due to animal transport and the possible need for segregation of transported animals at the destination:

- a) increased contact among animals, including those from different sources and with different disease histories;
- b) increased shedding of pathogens and increased susceptibility to infection related to stress and impaired defences against disease, including immunosuppression;
- c) exposure of animals to pathogens which may contaminate *vehicles, resting points, markets, etc.*

4. Cleaning and disinfection

- a) *Vehicles, crates, containers, etc.* used to carry the animals should be cleaned before re-use through the physical removal of manure and bedding by scraping, washing and flushing with water and detergent. This should be followed by *disinfection* when there are concerns about disease transmission.
- b) Manure, litter, bedding and the bodies of any animals which die during the *journey* should be disposed of in such a way as to prevent the transmission of disease and in compliance with all relevant health and environmental legislation.

- c) Establishments like livestock *markets, slaughterhouses, resting sites*, railway stations, etc. where animals are unloaded should be provided with appropriate areas for the cleaning and *disinfection* of *vehicles*.

Article 3.7.3.10.

Actions in the event of a refusal to allow the completion of the journey

1. The welfare of the animals should be the first consideration in the event of a refusal to allow the completion of the *journey*.
2. When the animals have been refused import, the *Competent Authority* of the *importing country* should make available suitable isolation facilities to allow the *unloading* of animals from a *vehicle* and their secure holding, without posing a risk to the health of national herd or flock, pending resolution of the situation. In this situation, the priorities should be:
 - a) The *Competent Authority* of the *importing country* should provide urgently in writing the reasons for the refusal.
 - b) In the event of a refusal for animal health reasons, the *Competent Authority* of the *importing country* should provide urgent access to a *veterinarian*, where possible an OIE *veterinarian(s)* appointed by the Director General, to assess the health status of the animals with regard to the concerns of the *importing country*, and the necessary facilities and approvals to expedite the required diagnostic testing.
 - c) The *Competent Authority* of the *importing country* should provide access to allow continued assessment of the health and other aspects of the welfare of the animals.
 - d) If the matter cannot be promptly resolved, the *Competent Authorities* of the *exporting* and *importing countries* should call on the OIE to mediate.
3. In the event that a *Competent Authority* requires the animals to remain on the *vehicle*, the priorities should be:
 - a) to allow provisioning of the *vehicle* with water and feed as necessary;
 - b) to provide urgently in writing the reasons for the refusal;
 - c) to provide urgent access to an independent *veterinarian(s)* to assess the health status of the animals, and the necessary facilities and approvals to expedite the required diagnostic testing in the event of a refusal for animal health reasons;
 - d) to provide access to allow continued assessment of the health and other aspects of the welfare of the animals, and the necessary actions to deal with any animal issues which arise.
4. The OIE should utilise its dispute settlement mechanism to identify a mutually agreed solution which will address animal health and any other welfare issues in a timely manner.

Article 3.7.3.11.

Species specific issues

Camelids of the new world in this context comprise llamas, alpacas, guanaco and vicuna. They have good eyesight and, like sheep, can negotiate steep slopes, though ramps should be as shallow as possible. They

load most easily in a bunch as a single animal will strive to rejoin the others. Whilst they are usually docile, they have an unnerving habit of spitting in self-defence. During transport, they usually lie down. They frequently extend their front legs forward when lying, so gaps below partitions should be high enough so that their legs are not trapped when the animals rise.

Cattle are sociable animals and may become agitated if they are singled out. Social order is usually established at about two years of age. When groups are mixed, social order has to be re-established and aggression may occur until a new order is established. Crowding of cattle may also increase aggression as the animals try to maintain personal space. Social behaviour varies with age, breed and sex; *Bos indicus* and *B. indicus*-cross animals are usually more temperamental than European breeds. Young bulls, when moved in groups, show a degree of playfulness (pushing and shoving) but become more aggressive and territorial with age. Adult bulls have a minimum personal space of six square metres. Cows with young calves can be very protective, and handling calves in the presence of their mothers can be dangerous. Cattle tend to avoid “dead end” in passages.

Goats should be handled calmly and are more easily led or driven than if they are excited. When goats are moved, their gregarious tendencies should be exploited. Activities which frighten, injure or cause agitation to animals should be avoided. Bullying is particularly serious in goats and can reflect demands for personal space. Housing strange goats together could result in fatalities, either through physical violence, or subordinate goats being refused access to food and water.

Horses in this context include donkeys, mules and hinnies. They have good eyesight and a very wide angle of vision. They may have a history of *loading* resulting in good or bad experiences. Good training should result in easier *loading*, but some horses can prove difficult, especially if they are inexperienced or have associated *loading* with poor transport conditions. In these circumstances, two experienced *animal handlers* can load an animal by linking arms or using a strop below its rump. Blindfolding may even be considered. Ramps should be as shallow as possible. Steps are not usually a problem when horses mount a ramp, but they tend to jump a step when descending, so steps should be as low as possible. Horses benefit from being individually stalled, but may be transported in compatible groups. When horses are to travel in groups, their shoes should be removed. Horses are prone to respiratory disease if they are restricted by period by tethers that prevent the lowering and lifting of their heads.

Pigs have poor eyesight, and may move reluctantly in strange surroundings. They benefit from well lit loading bays. Since they negotiate ramps with difficulty, these should be as level as possible and provided with secure footholds. Ideally, a hydraulic lift should be used for greater heights. Pigs also negotiate steps with difficulty. A good ‘rule-of-thumb’ is that no step should be higher than the pig’s front knee. Serious aggression may result if unfamiliar animals are mixed. Pigs are highly susceptible to heat stress.

Sheep are sociable animals with good eyesight, a relatively subtle and undemonstrative behaviour and a tendency to “flock together”, especially when they are agitated. They should be handled calmly and their tendency to follow each other should be exploited when they are being moved. Crowding of sheep may lead to damaging aggressive and submissive behaviours as animals try to maintain personal space. Sheep may become agitated if they are singled out for attention, or kept alone, and will strive to rejoin the group. Activities which frighten, injure or cause agitation to sheep should be avoided. They can negotiate steep ramps.

APPENDIX 3.7.5.

GUIDELINES FOR THE SLAUGHTER OF ANIMALS

Community comments:

The Community thanks the OIE as many Community comments have been taken on board; however, it would ask that the OIE Code Commission again look at the need to retain the rotary stunning pen, as well as further minor but important amendments as indicated below.

Article 3.7.5.1.

General principles

1. Object

These guidelines address the need to ensure the welfare of food animals during *pre-slaughter* and *slaughter* processes, until they are dead.

These guidelines apply to the *slaughter* in *slaughterhouses* of the following domestic animals: cattle, buffalo, bison, sheep, goats, camelids, deer, horses, pigs, ratites, rabbits and poultry. Other animals, wherever they have been reared, and all animals slaughtered outside *slaughterhouses* should be managed to ensure that their *transport, lairage, restraint* and *slaughter* is carried out without causing undue stress to the animals; the principles underpinning these guidelines apply also to these animals.

2. Personnel

Persons engaged in the *unloading, moving, lairage, care, restraint, stunning, slaughter* and bleeding of animals play an important role in the welfare of those animals. For this reason, there should be a sufficient number of personnel, who should be patient, considerate, competent and familiar with the guidelines outlined in the present Appendix and their application within the national context.

Competence may be gained through formal training and/or practical experience. This competence should be demonstrated through a current certificate from the *Competent Authority* or from an independent body accredited by the *Competent Authority*.

The management of the *slaughterhouse* and the *Veterinary Services* should ensure that *slaughterhouse* staff are competent and carry out their tasks in accordance with the principles of animal welfare.

3. Animal behaviour

Animal handlers should be experienced and competent in handling and moving farm livestock and understand the behaviour patterns of animals and the underlying principles necessary to carry out their tasks.

The behaviour of individual animals or groups of animals will vary, depending on their breed, sex, temperament and age and the way in which they have been reared and handled. Despite these differences, the following behaviour patterns which are always present to some degree in domestic animals, should be taken into consideration in handling and moving the animals.

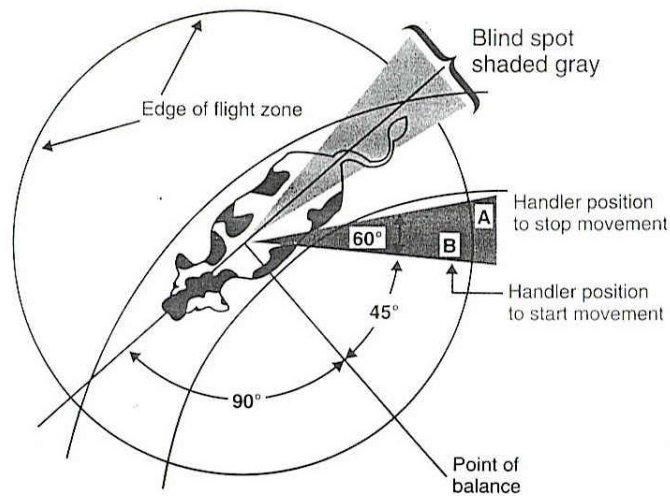
Most domestic livestock are kept in herds and follow a leader by instinct.

Animals which are likely to harm each other in a group situation should not be mixed at *slaughterhouses*.

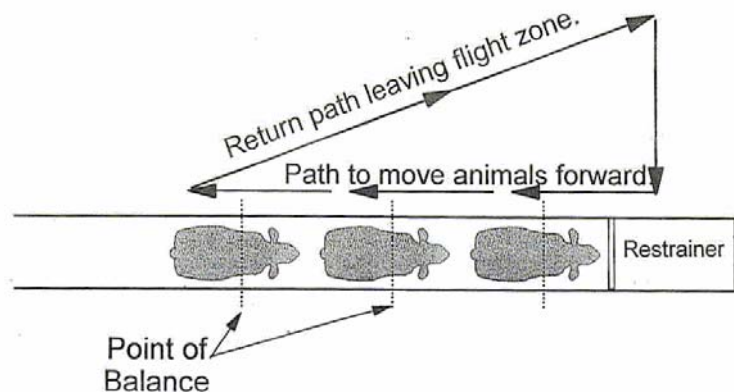
The desire of some animals to control their personal space should be taken into account in designing facilities.

Domestic animals will try to escape if any person approaches closer than a certain distance. This critical distance, which defines the flight zone, varies among species and individuals of the same species, and depends upon previous contact with humans. Animals reared in close proximity to humans (i.e., tame) have a smaller flight zone, whereas those kept in free range or extensive systems may have flight zones which may vary from one metre to many metres. *Animal handlers* should avoid sudden penetration of the flight zone which may cause a panic reaction which could lead to aggression or attempted escape.

An example of a flight zone (cattle)



Animal handler movement pattern to move cattle forward



Animal handlers should use the point of balance at the animal's shoulder to move animals, adopting a position behind the point of balance to move an animal forward and in front of the point of balance

to move it backward.

Domestic animals have wide-angle vision but only have limited forward binocular vision and poor perception of depth. This means that they can detect objects and movements beside and behind them, but can only judge distances directly ahead.

Although all domestic animals have a highly sensitive sense of smell, they react in different ways to the smells of *slaughterhouses*. Smells which cause fear or other negative responses should be taken into consideration when managing animals.

Domestic animals can hear over a greater range of frequencies than humans and are more sensitive to higher frequencies. They tend to be alarmed by constant loud noise and by sudden noises, which may cause them to panic. Sensitivity to such noises should also be taken into account when handling animals.

4. Distractions and their removal

Distractions that may cause approaching animals to stop, baulk or turn back should be designed out from new facilities or removed from existing ones. Below are examples of common distractions and methods for eliminating them:

- a) reflections on shiny metal or wet floors - move a lamp or change lighting;
- b) dark entrances to chutes, races, stun boxes or conveyor restrainers - illuminate with indirect lighting which does not shine directly into the eyes of approaching animals;
- c) animals seeing moving people or equipment up ahead - install solid sides on chutes and races or install shields;
- d) dead ends-avoid if possible by curving the passage, or make an illusory passage;
- e) chains or other loose objects hanging in chutes or on fences - remove them;
- f) uneven floors or a sudden drop in floor levels at the entrance to conveyor restrainers – avoid uneven floor surfaces or install a solid false floor under the restrainer to provide an illusion of a solid and continuous walking surface;
- g) sounds of air hissing from pneumatic equipment - install silencers or use hydraulic equipment or vent high pressure to the external environment using flexible hosing;
- h) clanging and banging of metal objects - install rubber stops on gates and other devices to reduce metal to metal contact;
- i) air currents from fans or air curtains blowing into the face of animals - redirect or reposition equipment.

Article 3.7.5.2.

Moving and handling animals

1. General considerations

Animals should be transported to *slaughter* in a way that minimises adverse animal health and welfare outcomes, and the transport should be conducted in accordance with the OIE guidelines for the transportation of animals (Appendices 3.7.2 and 3.7.3).

The following principles should apply to *unloading* animals, moving them into *lairage* pens, out of the *lairage* pens and up to the *slaughter* point:

- a) The conditions of the animals should be assessed upon their arrival for any animal welfare and health problems.

- b) Injured or sick animals, requiring immediate *slaughter*, should be killed humanely and without delay, at the site where they are found in accordance with the OIE guidelines for the killing of animals for disease control purposes (Appendix 3.7.6).

Written Community comment:

In paragraph (c) the following two changes should be introduced:

- (1) In the second sentence, after the words "Performance standards" the word "should", should be replaced by "could".**
- (2) The wording "99% of" should be deleted.**

Justification

- (1) Performance standards could be useful to improve animal welfare conditions but are not always necessary.**
- (2) As an objective no animals should be falling from animal welfare point of view.**

- c) Animals should not be forced to move at a speed greater than their normal walking pace, in order to minimise injury through falling or slipping. Performance standards should be established where numerical scoring of the prevalence of animals slipping or falling is used to evaluate whether animal moving practices and/or facilities should be improved. In properly designed and constructed facilities with competent *animal handlers*, it should be possible to move 99% of animals without their falling.
- d) Animals for slaughter should not be forced to walk over the top of other animals.
- e) Animals should be handled in such a way as to avoid harm, distress or injury. Under no circumstances should *animal handlers* resort to violent acts to move animals, such as crushing or breaking tails of animals, grasping their eyes or pulling them by the ears. *Animal handlers* should never apply an injurious object or irritant substance to animals and especially not to sensitive areas such as eyes, mouth, ears, anogenital region or belly. The throwing or dropping of animals, or their lifting or dragging by body parts such as their tail, head, horns, ears, limbs, wool, hair or feathers, should not be permitted. The manual lifting of small animals is permissible.
- f) When using goads and other aids, the following principles should apply:
- i) Animals that have little or no room to move should not be subjected to physical force or goads and other aids which compel movement. Electric goads and prods should only be used in extreme cases and not on a routine basis to move animals. The use and the power output should be restricted to that necessary to assist movement of an animal and only when an animal has a clear path ahead to move. Goads and other aids should not be used repeatedly if the animal fails to respond or move. In such cases it should be investigated whether some physical or other impediment is preventing the animal from moving.
 - ii) The use of such devices should be limited to battery-powered goads on the hindquarters of pigs and large ruminants, and never on sensitive areas such as the eyes, mouth, ears, anogenital region or belly. Such instruments should not be used on horses, sheep and goats of any age, or on calves or piglets.
 - iii) Useful and permitted goads include panels, flags, plastic paddles, flappers (a length of cane with a short strap of leather or canvas attached), plastic bags and rattles; they should be used in a manner sufficient to encourage and direct movement of the animals without causing undue stress.
 - iv) Painful procedures (including whipping, tail twisting, use of nose twitches, pressure on eyes, ears or external genitalia), or the use of goads or other aids which cause pain and suffering (including large sticks, sticks with sharp ends, lengths of metal piping, fencing wire or heavy leather belts), should not be used to move animals.

- v) Excessive shouting at animals or making loud noises (e.g. through the cracking of whips) to encourage them to move should not occur, as such actions may make the animals agitated, leading to crowding or falling.
- vi) Animals should be grasped or lifted in a manner which avoids pain or suffering and physical damage (e.g. bruising, fractures, dislocations). In the case of quadrupeds, manual lifting by a person should only be used in young animals or small species, and in a manner appropriate to the species; grasping or lifting animals only by their wool, hair, feathers, feet, neck, ears, tails, head, horns, limbs causing pain or suffering should not be permitted, except in an emergency where animal welfare or human safety may otherwise be compromised.
- vii) Conscious animals should not be thrown, dragged or dropped.

Written Community comment:

In paragraph (viii), first sentence, after the words "Performance standards", the word "should" should be replaced by "could".

Justification

Performance based standards are useful but not always necessary.

- viii) Performance standards should be established to evaluate the use of such instruments. Numerical scoring may be used and to measure the percentage of animals moved with an electric instrument and the percentage of animals slipping or falling at a point in the *slaughterhouse*. Any risk of compromising animal welfare, for example slippery floor, should be investigated immediately and the defect rectified to eliminate the problem.

2. Provisions relevant to animals delivered in *containers*

Written Community comment

The following text should be added under this section:

"(a) Appropriate restraint shall be applied to the animals before they are stunned or immediately killed. In particular individual restraint is necessary when captive-bolt is used or when animals are slaughtered without prior stunning."

Justification

The use of the above-mentioned methods of stunning or slaughter needs to be applied with high accuracy by the operator and can not be performed correctly under commercial conditions without individual restraint.

- a) *Containers* in which animals are transported should be handled with care, and should not be thrown, dropped or knocked over. Where possible, they should be horizontal while being loaded and unloaded mechanically, and stacked to ensure ventilation. In any case they should be moved and stored in an upright position as indicated by specific marks.
- b) Animals delivered in *containers* with perforated or flexible bottoms should be unloaded with particular care in order to avoid injury. Where appropriate, animals should be unloaded from the *containers* individually.
- c) Animals which have been transported in *containers* should be slaughtered as soon as possible; mammals and ratites which are not taken directly upon arrival to the place of slaughter should

have drinking water available to them from appropriate facilities at all times. Delivery of poultry for slaughter should be scheduled such that they are not deprived of water at the premises for longer than 12 hours. Animals which have not been slaughtered within 12 hours of their arrival should be fed, and should subsequently be given moderate amounts of food at appropriate intervals.

3. Provisions relevant to restraining and containing animals

- a) Provisions relevant to restraining animals for *stunning* or slaughter without *stunning*, to help maintain animal welfare, include:
 - i) provision of a non-slip floor;
 - ii) avoidance of excessive pressure applied by restraining equipment that causes struggling or vocalisation in animals;
 - iii) equipment engineered to reduce noise of air hissing and clanging metal;
 - iv) absence of sharp edges in restraining equipment that would harm animals;
 - v) avoidance of jerking or sudden movement of restraining device.
- b) Methods of *restraint* causing avoidable suffering should not be used in conscious animals. Such methods include the following:
 - i) suspending or hoisting animals (other than poultry) by the feet or legs;
 - ii) indiscriminate and inappropriate use of *stunning* equipment;
 - iii) mechanical clamping of the legs or feet of the animals (other than shackles used in poultry and ostriches) as the sole method of *restraint*;
 - iv) breaking legs, cutting leg tendons or blinding animals in order to immobilise them;
 - v) severing the spinal cord, for example using a puntilla or dagger, to immobilise animals; using electric currents to immobilise animals, except for proper *stunning*.

Article 3.7.5.3.

Lairage design and construction

1. General considerations

The *lairage* should be designed and constructed to hold an appropriate number of animals in relation to the throughput rate of the *slaughterhouse* without compromising the welfare of the animals.

In order to permit operations to be conducted as smoothly and efficiently as possible without injury or undue stress to the animals, the *lairage areas* should be designed and constructed so as to allow the animals to move freely in the required direction, using their behavioural characteristics and without undue penetration of their flight zone.

The following guidelines may help to achieve this.

2. Design of *lairages*

- a) The *lairage* should be designed to allow a one-way flow of animals from *unloading* to the point of *slaughter*, with a minimum number of abrupt corners to negotiate.

- b) In red meat *slaughterhouses*, pens, passageways and races should be arranged in such a way as to permit inspection of animals at any time, and to permit the removal of sick or injured animals when considered to be appropriate, for which separate appropriate accommodation should be provided.
- c) Each animal should have room to stand up and lie down and, when confined in a pen, to turn around, except where the animal is reasonably restrained for safety reasons (e.g. fractious bulls). Fractious animals should be slaughtered as soon as possible after arrival at the *slaughterhouse* to avoid welfare problems.

The *lairage* should have sufficient accommodation for the number of animals intended to be held. Drinking water should always be available to the animals, and the method of delivery should be appropriate to the type of animal held. Troughs should be designed and installed in such a way as to minimise the risk of fouling by faeces, without introducing risk of bruising and injury in animals, and should not hinder the movement of animals.

- d) Holding pens should be designed to allow as many animals as possible to stand or lie down against a wall. Where feed troughs are provided, they should be sufficient in number and feeding space to allow adequate access of all animals to feed. The feed trough should not hinder the movement of animals.
- e) Where tethers, ties or individual stalls are used, these should be designed so as not to cause injury or distress to the animals and should also allow the animals to stand, lie down and access any food or water that may need to be provided.
- f) Passageways and races should be either straight or consistently curved, as appropriate to the animal species. Passageways and races should have solid sides, but when there is a double race, the shared partition should allow adjacent animals to see each other. For pigs and sheep, passageways should be wide enough to enable two or more animals to walk side by side for as long as possible. At the point where passageways are reduced in width, this should be done by a means which prevents excessive bunching of the animals.
- g) *Animal handlers* should be positioned alongside races and passageways on the inside radius of any curve, to take advantage of the natural tendency of animals to circle an intruder. Where one-way gates are used, they should be of a design which avoids bruising. Races should be horizontal but where there is a slope, they should be constructed to allow the free movement of animals without injury.
- h) There should be a waiting pen, with a level floor and solid sides, between the holding pens and the race leading to the point of *stunning* or *slaughter*, to ensure a steady supply of animals for *stunning* or *slaughter* and to avoid having *animal handlers* trying to rush animals from the holding pens. The waiting pen should preferably be circular, but in any case, so designed that animals cannot be trapped or trampled.
- i) Ramps or lifts should be used for *loading* and *unloading* of animals where there is a difference in height or a gap between the floor of the *vehicle* and the unloading area. Unloading ramps should be designed and constructed so as to permit animals to be unloaded from *vehicles* on the level or at the minimum gradient achievable. Lateral side protection should be available to prevent animals escaping or falling. They should be well drained, with secure footholds and adjustable to facilitate easy movement of animals without causing distress or injury.

3. Construction of lairage

- a) *Lairage* should be constructed and maintained so as to provide protection from unfavourable climatic conditions, using strong and resistant materials such as concrete and metal which has

been treated to prevent corrosion. Surfaces should be easy to clean. There should be no sharp edges or protuberances which may injure the animals.

- b) Floors should be well drained and not slippery; they should not cause injury to the feet of the animals. Where necessary, floors should be insulated or provided with appropriate bedding. Drainage grids should be placed at the sides of pens and passageways and not where animals would have to cross them. Discontinuities or changes in floor patterns or texture which could cause baulking in the movement of animals should be avoided.
- c) *Lairage* should be provided with adequate lighting, but care should be taken to avoid harsh lights and shadows, which frighten the animals or affect their movement. The fact that animals will move more readily from a darker area into a well-lit area might be exploited by providing for lighting that can be regulated accordingly.
- d) *Lairage* should be adequately ventilated to ensure that waste gases (e.g. ammonia) do not build up and that draughts at animal height are minimised. Ventilation should be able to cope with the range of expected climatic conditions and the number of animals the *lairage* will be expected to hold.
- e) Care should be taken to protect the animals from excessively or potentially disturbing noises, for example by avoiding the use of noisy hydraulic or pneumatic equipment, and muffling noisy metal equipment by the use of suitable padding, or by minimising the transmission of such noise to the areas where animals are held and slaughtered.
- f) Where animals are kept in outdoor *lairage* without natural shelter or shade, they should be protected from the effects of adverse weather conditions.

Article 3.7.5.4.

Care of animals in lairage

Animals in *lairage* should be cared for in accordance with the following guidelines:

1. As far as possible, established groups of animals should be kept together. Each animal should have enough space to stand up, lie down and turn around. Animals hostile to each other should be separated.
2. Where tethers, ties or individual stalls are used, they should allow animals to stand up and lie down without causing injury or distress.
3. Where bedding is provided, it should be maintained in a condition that minimises risks to the health and safety of the animals, and sufficient bedding should be used so that animals do not become soiled with manure.
4. Animals should be kept securely in the *lairage*, and care should be taken to prevent them from escaping and from predators.
5. Suitable drinking water should be available to the animals on their arrival and at all times to animals in *lairage* unless they are to be slaughtered without delay.
6. If animals are not to be slaughtered as soon as possible, suitable feed should be available to the animals on arrival and at intervals appropriate to the species. Unweaned animals should be slaughtered as soon as possible.
7. In order to prevent heat stress, animals subjected to high temperatures, particularly pigs and poultry, should be cooled by the use of water sprays, fans or other suitable means. However, the potential for

water sprays to reduce the ability of animals to thermoregulate (especially poultry) should be considered in any decision to use water sprays. The risk of animals being exposed to very cold temperatures or sudden extreme temperature changes should also be considered.

8. The *lairage* area should be well lit in order to enable the animals to see clearly without being dazzled. During the night, the lights should be dimmed. Lighting should also be adequate to permit inspection of all animals. Subdued lighting, and for example, blue light may be useful in poultry *lairage* in helping to calm birds.

Written Community comment

The following text should be added at the end of the paragraph 9 after the word euthanasia:

" , or the animals should be humanely killed immediately if necessary."

Justification

The text should not imply that veterinary advice should always be sought as there are situations where this could seriously delay the killing without providing better welfare for the animals concerned.

9. The condition and state of health of the animals in a *lairage* should be inspected at least every morning and evening by a *veterinarian* or, under the *veterinarian's* responsibility, by another competent person, such as an *animal handler*. Animals which are sick, weak, injured or showing visible signs of distress should be separated, and veterinary advice should be sought immediately regarding treatment or euthanasia.
10. Lactating dairy animals should be slaughtered as soon as possible. Dairy animals with obvious udder distension should be milked to minimise udder discomfort.
11. Animals which have given birth during the *journey* or in the *lairage* should be slaughtered as soon as possible or provided with conditions which are appropriate for suckling, for their welfare and the welfare of the newborn. Under normal circumstances, animals which are expected to give birth during a *journey* should not be transported.
12. Animals with horns, antlers or tusks capable of injuring other animals, if aggressive, should be penned separately.

Recommendations for specific species are described in detail in Articles 3.7.5.5. to 3.7.5.8.

Article 3.7.5.5.

Management of foetuses during slaughter of pregnant animals

Under normal circumstances, pregnant animals that would be in the final 10% of their gestation period at the planned time of *unloading* at the *slaughterhouse* should neither be transported nor slaughtered. If such an event occurs, an *animal handler* should ensure that females are handled separately and the specific procedures described below are applied. In all cases, the welfare of foetuses and dams during slaughter should be safeguarded.

1. Foetuses should not be removed from the uterus sooner than five minutes after the maternal neck or chest cut, to ensure absence of consciousness. A foetal heartbeat will usually still be present and foetal movements may occur at this stage, but these are only a cause for concern if the exposed foetus successfully breathes air.
2. If a live mature foetus is removed from the uterus, it should be prevented from inflating its lungs and breathing air (e.g. by clamping the trachea).

3. When uterine, placental or foetal tissues, including foetal blood, are not to be collected as part of the post-slaughter processing of pregnant animals, all foetuses should be left inside the unopened uterus until they are dead. When uterine, placental or foetal tissues are to be collected, where practical, foetuses should not be removed from the uterus until at least 15-20 minutes after the maternal neck or chest cut.
4. If there is any doubt about consciousness, the foetus should be killed with a captive bolt of appropriate size or a blow to the head with a suitable blunt instrument.

The above guidelines do not refer to foetal rescue. Foetal rescue, the practice of attempting to revive foetuses found alive at evisceration of the dam, should not be attempted during normal commercial slaughter as it may lead to serious welfare complications in the newborn animal. These include impaired brain function resulting from oxygen shortage before rescue is completed, compromised breathing and body heat production because of foetal immaturity, and an increased incidence of infections due to a lack of colostrums.

Community comment

(on following Article 3.7.5.6)

The use of rotating box (i.e. restraining by inversion for cattle) should not be recommended. Therefore the rows referring to restraining by inversion should be deleted in the table.

Justification

The use of rotating box has raised serious and well founded welfare concerns among scientists while alternative methods are available which provide better welfare conditions without additional costs. See p. 25 European Food Safety Authority - AHAW/04-027 "Welfare aspects of stunning and killing methods" Scientific report of the Scientific Panel for Animal Health and Welfare".

http://www.efsa.europa.eu/en/science/ahaw/ahaw_opinions/495.html

Article 3.7.5.6.

Summary analysis of handling and restraining methods and the associated animal welfare issues

	Presentation of animals	Specific procedure	Specific purpose	AW concerns/implications	Key AW requirements	Applicable species
No restraint	Animals are grouped	Group container	Gas stunning	Specific procedure is suitable only for gas stunning	Competent animal handlers in lairage; facilities; stocking density	Pigs, poultry
		In the field	Free bullet	Inaccurate targeting and inappropriate ballistics not achieving outright kill with first shot	Operator competence	Deer
		Group stunning pen	Head-only electrical Captive bolt	Uncontrolled movement of animals impedes use of hand operated electrical and mechanical stunning methods	Competent animal handlers in lairage and at stunning point	Pigs, sheep, goats, calves
	Individual animal confinement	Stunning pen/box	Electrical and mechanical stunning methods	Loading of animal; accuracy of stunning method, slippery floor and animal falling down	Competent animal handlers	Cattle, buffalo, sheep, goats, horses, pigs, deer, camelids, ratites
Restraining methods	Head restraint, upright	Halter/ head collar/bridle	Captive bolt Free bullet	Suitable for halter-trained animals; stress in untrained animals	Competent animal handlers	Cattle, buffalo, horses, camelids
	Head restraint, upright	Neck yoke	Captive bolt Electrical-head-only Free bullet Slaughter without stunning	Stress of loading and neck capture; stress of prolonged restraint, horn configuration; unsuitable for fast line speeds, animals struggling and falling due to slippery floor, excessive pressure	Equipment; competent animal handlers, prompt stunning or slaughter	Cattle
	Leg restraint	Single leg tied in flexion (animal standing on 3 legs)	Captive bolt Free bullet	Ineffective control of animal movement, misdirected shots	Competent animal handlers	Breeding pigs (boars and sows)

Appendix XXXI (contd)

Summary analysis of handling and restraining methods and the associated animal welfare issues (contd)

	Presentation of animals	Specific procedure	Specific purpose	AW concerns/implications	Key AW requirements	Applicable species
Restraining methods	Upright restraint	Beak holding	Captive bolt Electrical-head-only	Stress of capture	Sufficient Competent-animal handlers	Ostriches
		Head restraint in electrical stunning box	Electrical-head-only	Stress of capture and positioning	Competent animal handlers	Ostriches
	Holding body upright- manual	Manual restraint	Captive bolt Electrical-head-only Slaughter without stunning	Stress of capture and restraint; accuracy of stunning/slaughter	Competent animal handlers	Sheep, goats, calves, raites, small camelids, poultry
	Holding body upright mechanical	Mechanical clamp / crush / squeeze/ V-restrainer (static)	Captive bolt Electrical methods Slaughter without stunning	Loading of animal and overriding; excessive pressure	Proper design and operation of equipment	Cattle, buffalo, sheep, goats, deer, pigs, ostriches
	Lateral restraint – manual or mechanical	Restrainer/cradle/c rush	Slaughter without stunning	Stress of restraint	Competent animal handlers	Sheep, goats, calves, camelids, cattle
	Upright restraint mechanical	Mechanical straddle (static)	Slaughter without stunning Electrical methods Captive bolt	Loading of animal and overriding	Competent animal handlers	Cattle, sheep, goats, pigs
	Upright restraint – manual or mechanical	Wing shackling	Electrical	Excessive tension applied prior to stunning	Competent animal handlers	Ostriches

Summary analysis of handling and restraining methods and the associated animal welfare issues (contd)

	Presentation of animals	Specific procedure	Specific purpose	AW concerns/implications	Key AW requirements	Applicable species
Restraining and /or conveying methods	Mechanical - upright	V-restrainer	Electrical methods Captive bolt Slaughter without stunning	Loading of animal and overriding; excessive pressure, size mismatch between restrainer and animal	Proper design and operation of equipment	Cattle, calves, sheep, goats, pigs
	Mechanical - upright	Mechanical straddle – band restrainer (moving)	Electrical methods Captive bolt Slaughter without stunning	Loading of animal and overriding, size mismatch between restrainer and animal	Competent animal handlers, proper design and layout of restraint	Cattle, calves, sheep, goats, pigs
	Mechanical - upright	Flat bed/deck Tipped out of <i>containers</i> on to conveyors	Presentation of birds for shackling prior to electrical stunning Gas stunning	Stress and injury due to tipping in dump-module systems height of tipping conscious poultry broken bones and dislocations	Proper design and operation of equipment	Poultry
	Suspension and/or inversion	Poultry shackle	Electrical stunning Slaughter without stunning	Inversion stress; pain from compression on leg bones	Competent animal handlers; proper design and operation of equipment	Poultry
	Suspension and/or inversion	Cone	Electrical – head-only Captive bolt Slaughter without stunning	Inversion stress	Competent animal handlers; proper design and operation of equipment	Poultry
	Upright restraint	Mechanical leg clamping	Electrical – head-only	Stress of resisting restraint in ostriches	Competent animal handlers; proper equipment design and operation	Ostriches

Appendix XXXI (contd)

Summary analysis of handling and restraining methods and the associated animal welfare issues (contd)

	Presentation of animals	Specific procedure	Specific purpose	AW concerns/implications	Key AW requirements	Applicable species
Restraining by inversion	Rotating box	Fixed side(s) (e.g. Weinberg pen)	Slaughter without stunning	Inversion stress; stress of resisting restraint, prolonged restraint, inhalation of blood and ingesta. Keep restraint as brief as possible	Proper design and operation of equipment	Cattle
		Compressible side(s)	Slaughter without stunning	Inversion stress, stress of resisting restraint, prolonged restraint Preferable to rotating box with fixed sides Keep restraint as brief as possible	Proper design and operation of equipment	Cattle
Body restraint	Casting/hobbling	Manual	Mechanical stunning methods Slaughter without stunning	Stress of resisting restraint; animal temperament; bruising. Keep restraint as short as possible	Competent animal handlers	Sheep, goats, calves, small camelids, pigs
Leg restraints		Rope casting	Mechanical stunning methods Slaughter without stunning	Stress of resisting restraint; prolonged restraint, animal temperament; bruising Keep restraint as short as possible	Competent animal handlers	Cattle, camelids
		Tying of 3 or 4 legs	Mechanical stunning methods Slaughter without stunning	Stress of resisting restraint; prolonged restraint, animal temperament; bruising Keep restraint as short as possible	Competent animal handlers	Sheep, goats, small camelids, pigs

Article 3.7.5.7.

Stunning methods1. General considerations

The competence of the operators, and the appropriateness, and effectiveness of the method used for *stunning* and the maintenance of the equipment are the responsibility of the management of the *slaughterhouse*, and should be checked regularly by a *Competent Authority*.

Persons carrying out *stunning* should be properly trained and competent, and should ensure that:

- a) the animal is adequately restrained;
- b) animals in *restraint* are stunned as soon as possible;
- c) the equipment used for *stunning* is maintained and operated properly in accordance with the manufacturer's recommendations, in particular with regard to the species and size of the animal;
- d) the instrument is applied correctly;
- e) stunned animals are bled out (slaughtered) as soon as possible;
- f) animals should not be stunned when slaughter is likely to be delayed; and
- g) backup *stunning* devices are available for immediate use if the primary method of *stunning* fails.

In addition, such persons should be able to recognise when an animal is not correctly stunned and should take appropriate action.

2. Mechanical stunning

A mechanical device should be applied usually to the front of the head and perpendicular to the bone surface. The following diagrams illustrate the proper application of the device for certain species.

Cattle

Figure source: Humane Slaughter Association (2005) Guidance Notes No. 3: Humane Killing of Livestock Using Firearms. Published by the Humane Slaughter Association, The Old School, Brewhouse Hill, Wheathampstead, Hertfordshire AL4 8AN, United Kingdom (www.hsa.org.uk).

The optimum position for cattle is at the intersection of two imaginary lines drawn from the rear of the eyes to the opposite horn buds.

Pigs



Figure source: Humane Slaughter Association (2005) Guidance Notes No. 3: Humane Killing of Livestock Using Firearms. Published by the Humane Slaughter Association, The Old School, Brewhouse Hill, Wheathampstead, Hertfordshire AL4 8AN, United Kingdom (www.hsa.org.uk).

The optimum position for pigs is on the midline just above eye level, with the shot directed down the line of the spinal cord.

Sheep

The optimum position for hornless sheep and goats is on the midline.



Figure source: Humane Slaughter Association (2005) Guidance Notes No. 3: Humane Killing of Livestock Using Firearms. Published by the Humane Slaughter Association, The Old School, Brewhouse Hill, Wheathampstead, Hertfordshire AL4 8AN, United Kingdom (www.hsa.org.uk).

The optimum position for hornless sheep and goats is on the midline.

Goats

The optimum position for heavily horned sheep and horned goats is behind the poll, aiming towards the angle of the jaw.

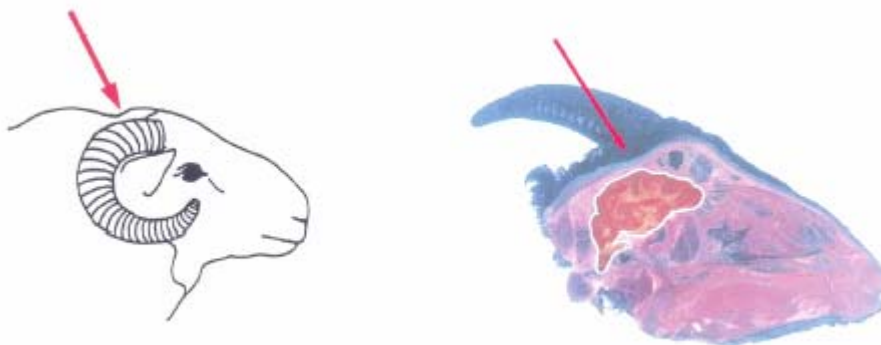


Figure Source: Humane Slaughter Association (2005) Guidance Notes No. 3: Humane Killing of Livestock Using Firearms. Published by the Humane Slaughter Association, The Old School, Brewhouse Hill, Wheathampstead, Hertfordshire AL4 8AN, United Kingdom (www.hsa.org.uk).

Horses



Figure source: Humane Slaughter Association (2005) Guidance Notes No. 3: Humane Killing of Livestock Using Firearms. Published by the Humane Slaughter Association, The Old School, Brewhouse Hill, Wheathampstead, Hertfordshire AL4 8AN, United Kingdom (www.hsa.org.uk).

The optimum position for horses is at right angles to the frontal surface, well above the point where imaginary lines from eyes to ears cross.

Signs of correct *stunning* using a mechanical instrument are as follows:

- a) the animal collapses immediately and does not attempt to stand up;
- b) the body and muscles of the animal become tonic (rigid) immediately after the shot;
- c) normal rhythmic breathing stops; and
- d) the eyelid is open with the eyeball facing straight ahead and is not rotated.

3. Electrical stunning

- a) General considerations

An electrical device should be applied to the animal in accordance with the following guidelines.

Electrodes should be designed, constructed, maintained and cleaned regularly to ensure that the flow of current is optimal and in accordance with manufacturing specifications. They should be placed so that they span the brain. The application of electrical currents which bypass the brain is unacceptable unless the animal has been stunned. The use of a single current leg-to-leg is unacceptable as a *stunning* method.

If, in addition, it is intended to cause cardiac arrest, the electrodes should either span the brain and immediately thereafter the heart, on the condition that it has been ascertained that the animal is adequately stunned, or span brain and heart simultaneously.

Electrical *stunning* equipment should not be applied on animals as a means of guidance, movement, *restraint* or immobilisation, and shall not deliver any shock to the animal before the actual *stunning* or *killing*.

Electrical *stunning* apparatus should be tested prior to application on animals using appropriate resistors or dummy loads to ensure the power output is adequate to stun animals.

The electrical *stunning* apparatus should incorporate a device that monitors and displays voltage (true RMS) and the applied current (true RMS) and that such devices are regularly calibrated at least annually.

Appropriate measures, such as removing excess wool or wetting the skin only at the point of contact, can be taken to minimise impedance of the skin and facilitate effective *stunning*.

Written Community comment

The following sentence should be added here: "In all cases electrodes should be applied rapidly and firmly and appropriate pressure maintained to facilitate proper contact and effective stunning".

Justification

Correct operator technique in applying the electrodes is very important to achieve effective stunning.

The *stunning* apparatus required for electrical *stunning* should be provided with adequate power to achieve continuously the minimum current level recommended for *stunning* as indicated in the table below:

Species	Minimum current levels for head-only stunning
Cattle	1.5 amps

Calves (bovines of less than 6 month of age)	1.0 amps
Pigs	1.25 amps
Sheep and goats	1.0 amps
Lambs	0.7 amps
Ostriches	0.4 amps

In all cases, the correct current level shall be attained within one second of the initiation of stun and maintained at least for three seconds and in accordance with the manufacturer's instructions.

b) Electrical *stunning* of birds using a waterbath

There should be no sharp bends or steep gradients in the shackle line and the shackle line should be as short as possible consistent with achieving acceptable line speeds, and ensuring that birds have settled by the time they reach the water bath. A breast comforter can be used effectively to reduce wing flapping and calm birds. The angle at which the shackle line approaches the entrance to the water bath, and the design of the entrance to the water bath, and the draining of excess 'live' water from the bath are all important considerations in ensuring birds are calm as they enter the bath, do not flap their wings, and do not receive pre-stun electric shocks.

In the case of birds suspended on a moving line, measures should be taken to ensure that the birds are not wing flapping at the entrance of the stunner. The birds should be secure in their shackle, but there should not be undue pressure on their shanks.

Waterbaths for poultry should be adequate in size and depth for the type of bird being slaughtered, and their height should be adjustable to allow for the head of each bird to be immersed. The electrode immersed in the bath should extend the full length of the waterbath.. Birds should be immersed in the bath up to the base of their wings.

The waterbath should be designed and maintained in such a way that when the shackles pass over the water, they are in continuous contact with the earthed rubbing bar.

The control box for the waterbath stunner should incorporate an ammeter which displays the total current flowing through the birds.

The shackle-to-leg contact should be wetted preferably before the birds are inserted in the shackles. In order to improve electrical conductivity of the water it is recommended that salt be added in the waterbath as necessary. Additional salt should be added regularly as a solution to maintain suitable constant concentrations in the waterbath.

Using waterbaths, birds are stunned in groups and different birds will have different impedances. The voltage should be adjusted so that the total current is the required current per bird as shown in the table hereafter, multiplied by the number of birds in the waterbath at the same time. The following values have been found to be satisfactory when employing a 50 Hertz sinusoidal alternating current.

Birds should receive the current for at least 4 seconds.

Species	Current (milliamperes per bird)
Broilers	420 <u>100</u>
Layers (spent hens)	420 <u>100</u>
Turkeys	150
Ducks and Geese	130

While a lower current may also be satisfactory, the current shall in any case be such as to ensure that unconsciousness occurs immediately and lasts until the bird has been killed by cardiac arrest or by bleeding. When higher electrical frequencies are used, higher currents may be required.

Frequency (Hz)	Chickens	Turkeys
< 200 Hz	100 mA	250 mA
From 200 to 400 Hz	150 mA	400 mA
From 400 to 1500 Hz	200 mA	400 mA

Every effort shall be made to ensure that no conscious or live birds enter the scalding tank.

In the case of automatic systems, until fail-safe systems of *stunning* and bleeding have been introduced, a manual back-up system should be in place to ensure that any birds which have missed the waterbath stunner and/or the automatic neck-cutter are immediately stunned and/or killed immediately, and they are dead before entering scald tank.

To lessen the number of birds that have not been effectively stunned reaching neck cutters, steps should be taken to ensure that small birds do not go on the line amongst bigger birds and that these small birds are stunned separately.

4. Gas stunning (under study)

a) Stunning of pigs by exposure to carbon dioxide (CO₂)

The concentration of CO₂ for *stunning* should be preferably 90% by volume but in any case no less than 80% by volume. After entering the *stunning* chamber, the animals should be conveyed to the point of maximum concentration of the gas as rapidly as possible and be kept until they are dead or brought into a state of insensibility which lasts until *death* occurs due to bleeding. Ideally, pigs should be exposed to this concentration of CO₂ for 3 minutes. Sticking should occur as soon as possible after exit from the gas chamber.

In any case, the concentration of the gas should be such that it minimises as far as possible all stress of the animal prior to loss of consciousness.

The chamber in which animals are exposed to CO₂ and the equipment used for conveying them through it shall be designed, constructed and maintained in such a way as to avoid injury or unnecessary stress to the animals. The animal density within the chamber should be such to avoid stacking animals on top of each others.

The conveyor and the chamber shall be adequately lit to allow the animals to see their surroundings and, if possible, each other.

Written Community comment

At the end of the sentence, the text "and to have access to the animals in emergency cases" should be deleted.

Justification

Access to animals in a gas chamber is of little interest from a welfare point of view, as, due to safety reason, operators will not be in a position to intervene in this particular area.

It should be possible to inspect the CO₂ chamber whilst it is in use, and to have access to the animals in emergency cases.

The chamber shall be equipped to continuously measure and display register at the point of *stunning* the CO₂ concentration and the time of exposure, and to give a clearly visible and audible warning if the concentration of CO₂ falls below the required level.

Emergency stunning equipment should be available at the point of exit from the *stunning* chamber and used on any pigs that do not appear to be dead or completely stunned.

b) Inert gas mixtures for stunning pigs

Inhalation of high concentrations of carbon dioxide is aversive and can be distressing to animals. Therefore, the use of non-aversive gas mixtures is being developed.

Such gas mixtures include:

- i) a maximum of 2% by volume of oxygen in argon, nitrogen or other inert gases, or
- ii) a maximum of 30% by volume of carbon dioxide and a maximum of 2% by volume of oxygen in mixtures with carbon dioxide and argon, nitrogen or other inert gases.

Exposure time to the gas mixtures should be sufficient to ensure that no pigs regain consciousness before *death* supervenes through bleeding or cardiac arrest is induced.

c) Gas stunning of poultry

The main objective of gas *stunning* is to avoid the pain and suffering associated with shackling conscious poultry under water bath *stunning* and *killing* systems. Therefore, gas *stunning* should be limited to birds contained in crates or on conveyors only. The gas mixture should be non-aversive to poultry.

Gas *stunning* of poultry in their transport *containers* will eliminate the need for live bird handling at the processing plant and all the problems associated with the electrical *stunning*. Gas *stunning* of poultry on a conveyor eliminates the problems associated with the electrical water bath *stunning*.

Live poultry should be conveyed into the gas mixtures either in transport crates or on conveyor belts.

The following gas procedures have been properly documented for chickens and turkeys but do not necessarily apply for other domestic birds. In any case the procedure should be designed as to ensure that all animals are properly stunned without unnecessary suffering.

- i) Gas mixtures used for *stunning* poultry include:
 - a minimum of 2 minutes exposure to 40% carbon dioxide, 30% oxygen and 30% nitrogen, followed by a minimum of one minute exposure to 80% carbon dioxide in air; or
 - a minimum of 2 minutes exposure to any mixture of argon, nitrogen or other inert gases with atmospheric air and carbon dioxide, provided that the carbon dioxide concentration does not exceed 30% by volume and the residual oxygen concentration does not exceed 2% by volume; or

- a minimum of 2 minutes exposure to argon, nitrogen, other inert gases or any mixture of these gases in atmospheric air with a maximum of 2% residual oxygen by volume; or
 - a minimum of 2 minutes exposure to a minimum of 55% carbon dioxide in air.
- ii) Requirements for effective use are as follows:
- Compressed gases should be vaporised prior to administration into the chamber and should be at room temperature to prevent any thermal shock. Under no circumstances, should solid gases with freezing temperatures enter the chamber.
 - Gas mixtures should be humidified.
 - Appropriate gas concentrations of oxygen and carbon dioxide should be monitored and displayed continuously at the level of the birds inside the chamber to ensure that anoxia ensues.

Under no circumstances, should birds exposed to gas mixtures be allowed to regain consciousness. If necessary, the exposure time should be extended.

5. Bleeding

From the point of view of animal welfare, animals which are stunned with a reversible method should be bled without delay. Maximum stun-stick interval depends on the parameters of the *stunning* method applied, the species concerned and the bleeding method used (full cut or chest stick when possible). As a consequence, depending on those factors, the slaughterhouse operator should set up a maximum stun-stick interval that ensures that no animals recover consciousness during bleeding. In any case the following time limits should be applied.

Stunning method	Maximum delay for bleeding to be started
Electrical methods and non penetrating captive bolt	20 seconds
CO ₂	60 seconds (after leaving the chamber)

All animals should be bled out by incising both carotid arteries, or the vessels from which they arise (e.g., chest stick). However, when the *stunning* method used cardiac arrest, the incision of all of these *vessels* is not necessary from the point of view of animal welfare.

It should be possible for staff to observe, inspect and access the animals throughout the bleeding period. Any animal showing signs of recovering consciousness should be re-stunned.

After incision of the blood vessels, no scalding carcass treatment or dressing procedures should be performed on the animals for at least 30 seconds, or in any case until all brain-stem reflexes have ceased.

Article 3.7.5.8.

Summary analysis of stunning methods and the associated animal welfare issues

Method	Specific method	AW concerns/implications	Key AW requirements applicable	Species	Comment
Mechanical	Free bullet	Inaccurate targeting and inappropriate ballistics	Operator competence, achieving outright kill with first shot	Cattle, calves, buffalo, deer, horses, pigs (boars and sows)	Personnel safety
	Captive bolt - penetrating	Inaccurate targeting, velocity and diameter of bolt	Competent operation and maintenance of equipment; restraint; accuracy	Cattle, calves, buffalo, sheep, goats, deer, horses, pigs, camelids, ratites	(Unsuitable for specimen collection from TSE suspects). A back-up gun should be available in the event of an ineffective shot
	Captive bolt - non-penetrating	Inaccurate targeting, velocity of bolt, potentially higher failure rate than penetrating captive bolt	Competent operation and maintenance of equipment; restraint; accuracy	Cattle, calves, sheep, goats, deer, pigs, camelids, ratites	Presently available devices are not recommended for young bulls and animals with thick skull. This method should only be used for cattle and sheep when alternative methods are not available.
	Manual percussive blow	Inaccurate targeting; insufficient power; size of instrument	Competent animal handlers; restraint; accuracy. Not recommended for general use	Young and small mammals, ostriches and poultry	Mechanical devices potentially more reliable. Where manual percussive blow is used, unconsciousness should be achieved with single sharp blow delivered to central skull bones
Electrical	Split application: 1. across head then head to chest; 2. across head then across chest	Accidental pre-stun electric shocks; electrode positioning; application of a current to the body while animal conscious; inadequate current and voltage	Competent operation and maintenance of equipment; restraint; accuracy	Cattle, calves, sheep, goats and pigs, ratites and poultry	Systems involving repeated application of head-only or head-to-leg with short current durations (<1 second) in the first application should not be used.

Appendix XXXI (contd)

Summary analysis of stunning methods and the associated animal welfare issues

Method	Specific method	AW concerns/implications	Key AW requirements applicable	Species	Comment
Electrical	Single application: 1. head only; 2. head to body; 3. head to leg	Accidental pre-stun electric shocks; inadequate current and voltage; wrong electrode positioning; recovery of consciousness	Competent operation and maintenance of equipment; restraint; accuracy	Cattle, calves, sheep, goats, pigs, ratites, poultry	
	Waterbath	Restraint, accidental pre-stun electric shocks; inadequate current and voltage; recovery of consciousness	Competent operation and maintenance of equipment	Poultry only	
Gaseous	CO ₂ air/O ₂ mixture; CO ₂ inert gas mixture	Aversiveness of high CO ₂ concentrations, respiratory distress; inadequate exposure	Concentration; duration of exposure; design, maintenance and operation of equipment; stocking density management	Pigs, poultry	
	Inert gases	Recovery of consciousness	Concentration; duration of exposure; design, maintenance and operation of equipment; stocking density management	Pigs, poultry	

Article 3.7.5.9.

Written Community comments	
(1)	On the first row, column "AW concerns/implications", the text "pain during and after the cut" should be also added here (as in the second row)
(2)	On the first row, column "comment" the figure of "60 seconds" should be replaced by "30 seconds".
Justification	
(1)	see second row.
(2)	See last paragraph of section 5. bleeding of Article 3.7.5.7

Summary analysis of slaughter methods and the associated animal welfare issues

Slaughter methods	Specific method	AW concerns / implications	Key requirements	Species	Comments
Bleeding out by severance of blood vessels in the neck without stunning	Full frontal cutting across the throat	Failure to cut both common carotid arteries; occlusion of cut arteries.	High level of operator competency. A very sharp blade or knife, of sufficient length so that the point of the knife remains outside the incision during the cut; the point of the knife should not be used to make the incision. An incision which does not close over the knife during the throat cut.	Cattle, buffalo, horses, camelids, sheep, goats, poultry, ratites	No further procedure should be carried out before the bleeding out is completed (i.e. at least 60 seconds for mammals) The practice to remove hypothetical blood clots just after the bleeding should be discouraged since this may increase animal suffering.
Bleeding with prior stunning	Full frontal cutting across the throat	Failure to cut both common carotid arteries; occlusion of cut arteries; pain during and after the cut.	A very sharp blade or knife, of sufficient length so that the point of the knife remains outside the incision during the cut; the point of the knife should not be used to make the incision. An incision which does not close over the knife during the throat cut.	Cattle, buffalo, horses, camelids, sheep, goats,	

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	Neck stab followed by forward cut	Ineffective stunning; failure to cut both common carotid arteries; impaired blood flow; delay in cutting after reversible stunning	Prompt and accurate cutting	Camelids, sheep, goats, poultry, ratites	
	Neck stab alone	Ineffective stunning; failure to cut both common carotid arteries; impaired blood flow; delay in cutting after reversible stunning	Prompt and accurate cutting	Camelids, sheep, goats, poultry, ratites	

Appendix XXXI (contd)

Summary analysis of slaughter methods and the associated animal welfare issues (contd)

Slaughter methods	Specific method	AW concerns / implications	Key requirements	Species	Comments
Bleeding with prior stunning (contd)	Chest stick into major arteries or hollow-tube knife into heart	Ineffective stunning; Inadequate size of stick wound inadequate length of sticking knife; delay in sticking after reversible stunning	Prompt and accurate sticking	Cattle, sheep, goats, pigs	
	Neck skin cut followed by severance of vessels in the neck	Ineffective stunning; Inadequate size of stick wound; Inadequate length of sticking knife; delay in sticking after reversible stunning	Prompt and accurate cutting of vessels	Cattle	
Bleeding with prior stunning	Automated mechanical cutting	Ineffective stunning; failure to cut and misplaced cuts. Recovery of consciousness following reversible stunning systems	Design, maintenance and operation of equipment; accuracy of cut; manual back-up	Poultry only	
	Manual neck cut on one side	Ineffective stunning; recovery of consciousness following reversible stunning systems	Prior non-reversible stunning	Poultry only	N.B. slow induction of unconsciousness under slaughter without stunning
	Oral cut	Ineffective stunning; recovery of consciousness following reversible stunning systems	Prior non-reversible stunning	Poultry only	N.B. slow induction of unconsciousness in non-stun systems

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Summary analysis of slaughter methods and the associated animal welfare issues

Slaughter methods	Specific method	AW concerns / implications	Key requirements	Species	Comments
Other methods without stunning	Decapitation with a sharp knife	Pain due to loss of consciousness not being immediate		Sheep, goats, poultry	This method is only applicable to Jhatka slaughter
	Manual neck dislocation and decapitation	Pain due to loss of consciousness not being immediate; difficult to achieve in large birds	Neck dislocation should be performed in one stretch to sever the spinal cord	Poultry only	Slaughter by neck dislocation should be performed in one stretch to sever the spinal cord. Acceptable only when slaughtering small numbers of small birds
Cardiac arrest in a waterbath electric stunner	Bleeding by evisceration		Induction of cardiac arrest	Quail	
	Bleeding by neck cutting			Poultry	

Article 3.7.5.10.

Methods, procedures or practices unacceptable on animal welfare grounds

1. The restraining methods which work through immobilisation by injury such as breaking legs, leg tendon cutting, and severing the spinal cord (e.g. using a puntilla or dagger) cause severe pain and stress in animals. Those methods are not acceptable in any species.
2. The use of the electrical *stunning* method with a single application leg to leg is ineffective and unacceptable in any species.
3. The slaughter method of brain stem severance by piercing through the eye socket or skull bone without prior *stunning*, is not acceptable in any species.

— text deleted

APPENDIX 3.7.6.

GUIDELINES FOR THE KILLING OF ANIMALS FOR DISEASE CONTROL PURPOSES

Community comments:

The Community thank the OIE as many Community comments have been taken on board; however, it would ask that the OIE again look at minor but important amendments as indicated below.

Article 3.7.6.1.

General principles

These guidelines are based on the premise that a decision to kill the animals has been made, and address the need to ensure the welfare of the animals until they are dead.

1. All personnel involved in the humane *killing* of animals should have the relevant skills and competencies. Competence may be gained through formal training and/or practical experience.
2. As necessary, operational procedures should be adapted to the specific circumstances operating on the premises and should address, apart from animal welfare, aesthetics of the method of euthanasia, cost of the method, operator safety, biosecurity and environmental aspects, aesthetics of the method of euthanasia and cost of the method.
3. Following the decision to kill the animals, *killing* should be carried out as quickly as possible and normal husbandry should be maintained until the animals are killed.
4. The handling and movement of animals should be minimised and when done, it should be done in accordance with the guidelines described below.
5. Animal *restraint* should be sufficient to facilitate effective *killing*, and in accordance with animal welfare and operator safety requirements; when *restraint* is required, *killing* should follow with minimal delay.

Written Community comment

The paragraph 6 should be amended in the following way:

6. When animals are killed for disease control purposes, methods used should result in immediate death or immediate loss of consciousness lasting until death; when loss of consciousness is not immediate, induction of unconsciousness should be ~~non-aversive~~ as least aversive as possible and should not cause avoidable anxiety, pain, distress or suffering in the animals.

Justification

Total non-averseness is technically difficult to guarantee especially under disease control situation.

6. When animals are killed for disease control purposes, methods used should result in immediate death or immediate loss of consciousness lasting until death; when loss of consciousness is not immediate, induction of unconsciousness should be non-aversive and should not cause anxiety, pain, distress or suffering in the animals.
7. For animal welfare considerations, young animals should be killed before older animals; for biosecurity considerations, infected animals should be killed first, followed by in-contact animals, and then the remaining animals.
8. There should be continuous monitoring of the procedures by the *Competent Authorities* to ensure they are consistently effective with regard to animal welfare, operator safety and biosecurity.
9. When the operational procedures are concluded, there should be a written report describing the practices adopted and their effect on animal welfare, operator safety and biosecurity.
10. These general principles should also apply when animals need to be killed for other purposes such as after natural disasters or for culling animal populations.

Article 3.7.6.2.

Organisational structure

Disease control contingency plans should be in place at a national level and should contain details of management structure, disease control strategies and operational procedures; animal welfare considerations should be addressed within these disease control contingency plans. The plans should also include a strategy to ensure that an adequate number of personnel competent in the humane *killing* of animals is available. Local level plans should be based on national plans and be informed by local knowledge.

Disease control contingency plans should address the animal welfare issues that may result from animal movement controls.

The operational activities should be led by an *official veterinarian* who has the authority to appoint the personnel in the specialist teams and ensure that they adhere to the required animal welfare and biosecurity standards. When appointing the personnel, he/she should ensure that the personnel involved ~~has~~ have the required competencies.

The *official veterinarian* should be responsible for all activities across one or more affected premises and should be supported by coordinators for planning (including communications), operations and logistics to facilitate efficient operations.

The *official veterinarian* should provide overall guidance to personnel and logistic support for operations on all affected premises to ensure consistency in adherence to the OIE animal welfare and animal health guidelines.

A specialist team, led by a team leader answerable to the *official veterinarian*, should be deployed to work on each affected premises. The team should consist of personnel with the competencies to conduct all required operations; in some situations, personnel may be required to fulfil more than one function. Each team should contain a *veterinarian* or have access to veterinary advice at all times.

In considering the animal welfare issues associated with the *killing* of animals, the key personnel, their responsibilities and competencies required are described in Article 3.7.6.3.

Responsibilities and competencies of the specialist team

1. Team leader

- a) Responsibilities:
 - i) plan overall operations on ~~an~~ affected premises;
 - ii) determine and address requirements for animal welfare, operator safety and biosecurity;
 - iii) organise, brief and manage team of people to facilitate humane *killing* of the relevant animals on the premises in accordance with national regulations and these guidelines;
 - iv) determine logistics required;
 - v) monitor operations to ensure animal welfare, operator safety and biosecurity requirements are met;
 - vi) report upwards on progress and problems;
 - vii) provide a written report at the conclusion of the *killing*, describing the practices adopted and their effect on the animal welfare, operator safety and biosecurity outcomes.
- b) Competencies
 - i) appreciation of normal animal husbandry practices;
 - ii) appreciation of animal welfare and the underpinning behavioural, anatomical and physiological processes involved in the *killing* process;
 - iii) skills to manage all activities on premises and deliver outcomes on time;
 - iv) awareness of psychological effects on farmers, team members and general public;
 - v) effective communication skills;
 - vi) appreciation of the environmental impacts caused by their operation.

2. Veterinarian

- a) Responsibilities
 - i) determine and supervise the implementation of the most appropriate *killing* method to ensure that animals are killed without avoidable pain and distress;
 - ii) determine and implement the additional requirements for animal welfare, including the order of *killing*;
 - iii) ensure that confirmation of animals deaths is carried out by competent persons at appropriate times after the *killing* procedure;
 - iv) minimise the risk of disease spread within and from the premises through the supervision of biosecurity procedures;
 - v) continuously monitor animal welfare and biosecurity procedures;

vi) in cooperation with the leader, prepare a written report at the conclusion of the *killing*, describing the practices adopted and their effect on animal welfare.

b) Competencies

i) ability to assess animal welfare, especially the effectiveness of *stunning* and *killing*, and to correct any deficiencies;

ii) ability to assess biosecurity risks.

3. Animal handlers

a) Responsibilities

i) review on-site facilities in terms of their appropriateness;

ii) design and construct temporary animal handling facilities, when required;

iii) move and restrain animals;

iv) continuously monitor animal welfare and biosecurity procedures.

b) Competencies

i) animal handling in emergency situations and in close confinement is required;

ii) an appreciation of biosecurity and containment principles.

4. Animal killing personnel

a) Responsibilities

Humane *killing* of the animals through effective *stunning* and *killing* should be ensured.

b) Competencies

i) when required by regulations, licensed to use necessary equipment;

ii) competent to use and maintain relevant equipment;

iii) competent to use techniques for the species involved;

iv) competent to assess effective *stunning* and *killing*.

5. Carcass disposal personnel

a) Responsibilities

An efficient carcass disposal (to ensure *killing* operations are not hindered) should be ensured.

b) Competencies

The personnel should be competent to use and maintain available equipment and apply techniques for the species involved.

6. Farmer/owner/manager

a) Responsibilities

i) assist when requested.

- b) Competencies
 - i) specific knowledge of his/her animals and their environment.

Article 3.7.6.4.

Considerations in planning the humane killing of animals

Many activities will need to be conducted on affected premises, including the humane *killing* of animals. The team leader should develop a plan for humanely *killing* animals on the premises which should include consideration of:

1. minimising handling and movement of animals;
2. *killing* the animals on the affected premises; however, there may be circumstances where the animals may need to be moved to another location for *killing*; when the *killing* is conducted at an *abattoir*, the guidelines in Appendix 3.7.6. on *slaughter* of animals should be followed;
3. the species, number, age and size of animals to be killed, and the order of *killing* them;
4. methods of *killing* the animals, and their cost;
5. housing, husbandry, location of the animals, as well as accessibility of the farm;
6. the availability and effectiveness of equipment needed for *killing* of the animals, as well as the time necessary to kill the required number of animals using such methods;
7. the facilities available on the premises that will assist with the *killing* including any additional facilities that may need to be brought on and then removed from the premises;
8. biosecurity and environmental issues;
9. the health and safety of personnel conducting the *killing*;
10. any legal issues that may be involved, for example where restricted veterinary drugs or poisons may be used, or where the process may impact on the environment;
11. the presence of other nearby premises holding animals;
12. possibilities for removal, disposal and destruction of carcasses.

The plan should minimise the negative welfare impacts of the killing by taking into account the different phases of the procedures to be applied for killing (choice of the killing sites, killing methods, etc.) and the measures restricting the movements of the animals.

Competences and skills of the personnel handling and killing animals

In designing a *killing* plan, it is essential that the method chosen be consistently reliable to ensure that all animals are humanely and quickly killed.

Article 3.7.6.5.

Table summarising killing methods described in Articles 3.7.6.6.-3.7.6.17.

Species	Age range	Procedure	Restraint necessary	Animal welfare concerns with inappropriate application	Article reference
Cattle	all	free bullet	no	non-lethal wounding	3.7.6.6.
	all except neonates	captive bolt - penetrating, followed by pithing or bleeding	yes	ineffective stunning	3.7.6.7.
	adults only	captive bolt - non-penetrating, followed by bleeding	yes	ineffective stunning, regaining of consciousness before killing	3.7.6.8.
	calves only	electrical, two stage application	yes	pain associated with cardiac arrest after ineffective stunning	3.7.6.10.
	calves only	electrical, single application (method 1)	yes	ineffective stunning	3.7.6.11.
	all	injection with barbiturates and other drugs	yes	non-lethal dose, pain associated with injection site	3.7.6.15.
Sheep and goats	all	free bullet	no	non-lethal wounding	3.7.6.6.
	all except neonates	captive bolt - penetrating, followed by pithing or bleeding	yes	ineffective stunning, regaining of consciousness before death	3.7.6.7.
	all except neonates	captive bolt - non-penetrating, followed by bleeding	yes	ineffective stunning, regaining of consciousness before death	3.7.6.8.
	neonates	captive bolt - non-penetrating	yes	non-lethal wounding	3.7.6.8.
	all	electrical, two stage application	yes	pain associated with cardiac arrest after ineffective stunning	3.7.6.10.
	all	electrical, single application (Method 1)	yes	ineffective stunning	3.7.6.11.
	neonates only	CO ₂ / air mixture	yes	slow induction of unconsciousness, aversiveness of induction	3.7.6.12.
	neonates only	nitrogen and/or inert gas mixed with CO ₂	yes	slow induction of unconsciousness, aversiveness of induction	3.7.6.13.
	neonates only	nitrogen and/or inert gases	yes	slow induction of unconsciousness,	3.7.6.14.
	all	injection of barbiturates and other drugs	yes	non-lethal dose, pain associated with injection site	3.7.6.15.

Species	Age range	Procedure	Restraint Necessary	Animal welfare concerns with inappropriate application	Article reference
Pigs	all, <u>except neonates</u>	free bullet	no	Non-lethal wounding	3.7.6.6.
	all except neonates	captive bolt - penetrating, followed by pithing or bleeding	yes	ineffective stunning, regaining of consciousness before death	3.7.6.7.
	neonates only	captive bolt - non-penetrating	yes	Non-lethal wounding	3.7.6.8.
	all §	electrical, two stage application	yes	pain associated with cardiac arrest after ineffective stunning	3.7.6.10.
	all	electrical, single application (Method 1)	yes	ineffective stunning	3.7.6.11.
	neonates only	CO ₂ / air mixture	yes	slow induction of unconsciousness, aversiveness of induction	3.7.6.12.
	neonates only	nitrogen and/or inert gas mixed with CO ₂	yes	slow induction of unconsciousness, aversiveness of induction	3.7.6.13.
	neonates only	nitrogen and/or inert gases	yes	slow induction of unconsciousness	3.7.6.14.
	all	injection with barbiturates and other drugs	yes	non-lethal dose, pain associated with injection site	3.7.6.15.
Poultry	adults only	captive bolt - non-penetrating	yes	ineffective stunning	3.7.6.8.
	day-olds and eggs only	Maceration	no	non-lethal wounding, non-immediacy;	3.7.6.9.
	adults only	electrical single application (Method 2)	yes	ineffective stunning	3.7.6.11.
	adults only	electrical single application, followed by killing (Method 3)	yes	ineffective stunning; regaining of consciousness before death	3.7.6.11.
	all	CO ₂ / air mixture Method 1 Method 2	yes no	slow induction of unconsciousness, aversiveness of induction	3.7.6.12.
	all	nitrogen and/or inert gas mixed with CO ₂	yes	slow induction of unconsciousness, aversiveness of induction	3.7.6.13.
	all	nitrogen and/or inert gases	yes	slow induction of unconsciousness	3.7.6.14.
	all	injection of barbiturates and other drugs	yes	Non-lethal dose, pain associated with injection site	3.7.6.15.
	adults only	addition of anaesthetics to feed or water, followed by an appropriate killing method	no	ineffective or slow induction of unconsciousness	3.7.6.16.

- The methods are described in the order of mechanical, electrical and gaseous, not in an order of desirability from an animal welfare viewpoint.
- § The only preclusion against the use of this method for neonates is the design of the stunning tongs that may not facilitate their application across such a small-sized head/body.

Article 3.7.6.6.

Free bullet

1. Introduction

- a) A free bullet is a projectile fired from a shotgun, rifle, handgun or purpose-made humane killer.
- b) The most commonly used firearms for close range use are:
 - i) humane killers (specially manufactured/adapted single-shot weapons);
 - ii) shotguns (12, 16, 20, 28 bore and .410);
 - iii) rifles (.22 rimfire);
 - iv) handguns (various calibres from .32 to .45).
- c) The most commonly used firearms for long range use are rifles (.22, .243, .270 and .308).
- d) A free bullet used from long range should be aimed to penetrate the skull or soft tissue at the top of the neck of the animal (high neck shot), to cause irreversible concussion and death and should only be used by properly trained and competent marksmen.

2. Requirements for effective use

- a) The marksman should take account of human safety in the area in which he/she is operating. Appropriate vision and hearing protective devices should be worn by all personnel involved.
- b) The marksman should ensure that the animal is not moving and in the correct position to enable accurate targeting and the range should be as short as possible (5 –50 cm for a shotgun) but the barrel should not be in contact with the head of the animal.
- c) The correct cartridge, calibre and type of bullet for the different species age and size should be used. Ideally the ammunition should expand upon impact and dissipate its energy within the cranium.
- d) Shot animals should be checked to ensure the absence of brain stem reflexes.

Figure 1. The optimum shooting position for cattle is at the intersection of two imaginary lines drawn from the rear of the eyes to the opposite horn buds.



Figure Source: Humane Slaughter Association (2005) Guidance Notes No. 3: Humane Killing of Livestock Using Firearms. Published by the Humane Slaughter Association, The Old School, Brewhouse Hill, Wheathampstead, Hertfordshire, AL4 8AN, United Kingdom (www.hsa.org.uk).

Figure 2. The optimum position for hornless sheep and goats is on the midline, with the shot aiming at the angle of the jaw.

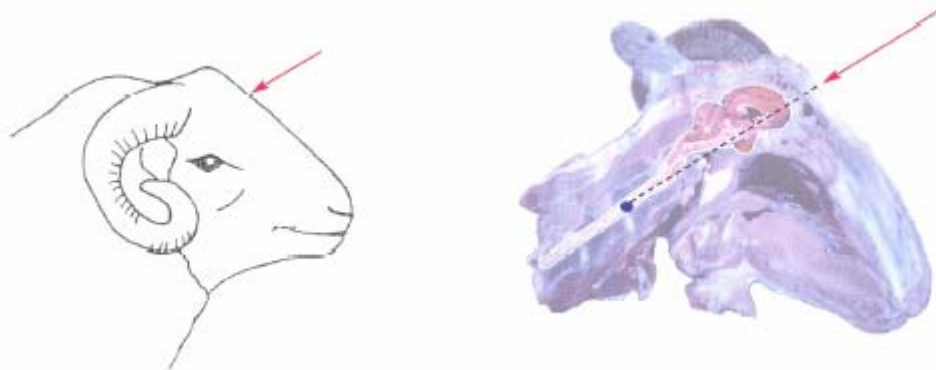


Figure Source: Humane Slaughter Association (2005) Guidance Notes No. 3: Humane Killing of Livestock Using Firearms. Published by the Humane Slaughter Association, The Old School, Brewhouse Hill, Wheathampstead, Hertfordshire, AL4 8AN, United Kingdom (www.hsa.org.uk).

Figure 3. The optimum shooting position for heavily horned sheep and horned goats is behind the poll aiming towards the angle of the jaw.

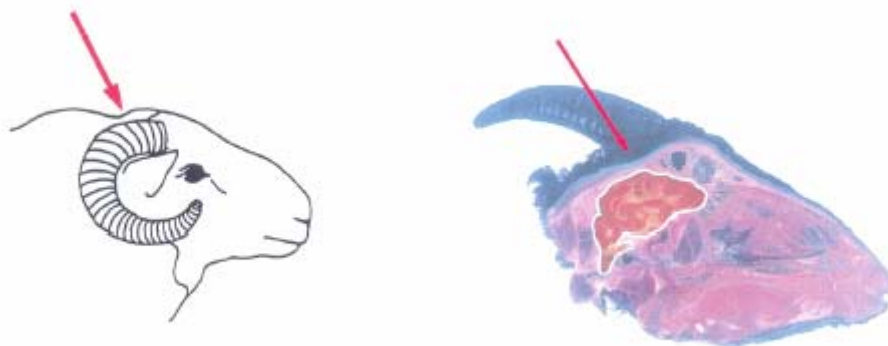


Figure Source: Humane Slaughter Association (2005) Guidance Notes No. 3: Humane Killing of Livestock Using Firearms. Published by the Humane Slaughter Association, The Old School, Brewhouse Hill, Wheathampstead, Hertfordshire, AL4 8AN, United Kingdom (www.hsa.org.uk).

Figure 4. The optimum shooting position for pigs is just above eye level, with the shot directed down the line of the spinal cord.



Figure Source: Humane Slaughter Association (2005) Guidance Notes No. 3: Humane Killing of Livestock Using Firearms. Published by the Humane Slaughter Association, The Old School, Brewhouse Hill, Wheathampstead, Hertfordshire, AL4 8AN, United Kingdom (www.hsa.org.uk).

3. Advantages

- a) Used properly, a free bullet provides a quick and effective method for *killing*.
- b) It requires minimal or no *restraint* and can be used to kill from a distance by properly trained and competent marksmen.
- c) It is suitable for *killing* agitated animals in open spaces.

4. Disadvantages

- a) The method is potentially dangerous to humans and other animals in the area.
- b) It has the potential for non-lethal wounding.
- c) Destruction of brain tissue may preclude diagnosis of some diseases.
- d) Leakage of bodily fluids may present a biosecurity risk.
- e) Legal requirements may preclude or restrict use.
- f) There is a limited availability of competent personnel.

4. Conclusions

The method is suitable for cattle, sheep, goats and pigs, including large animals in open spaces.

Article 3.7.6.7.

Penetrating captive bolt

1. Introduction

A penetrating captive bolt is fired from a gun powered by either compressed air or a blank cartridge. There is no free projectile.

The captive bolt should be aimed on the skull in a position to penetrate the cortex and mid-brain of the animal. The impact of the bolt on the skull produces unconsciousness. Physical damage to the brain caused by penetration of the bolt may result in death, however pithing or bleeding should be performed as soon as possible after the shot to ensure the death of the animal.

2. Requirements for effective use

- a) For cartridge powered and compressed air guns, the bolt velocity and the length of the bolt should be appropriate to the species and type of animal, in accordance with the recommendations of the manufacturer.
- b) Captive bolt guns should be frequently cleaned and maintained in good working condition.
- c) More than one gun may be necessary to avoid overheating and a back-up gun should be available in the event of an ineffective shot.
- d) Animals should be restrained; at a minimum they should be penned for cartridge powered guns and in a race for compressed air guns.
- e) The operator should ensure that the head of the animal is accessible.
- f) The operator should fire the captive bolt at right angles to the skull in the optimal position (see figures 1, 3 & 4. The optimum shooting position for hornless sheep is on the highest point of the head, on the midline and aim towards the angle of the jaw).
- g) To ensure the death of the animal, pithing or bleeding should be performed as soon as possible after *stunning*.
- h) Animals should be monitored continuously after *stunning* until death to ensure the absence of brain stem reflexes.

3. Advantages

- a) Mobility of cartridge powered equipment reduces the need to move animals.
- b) The method induces an immediate onset of a sustained period of unconsciousness.

4. Disadvantages

- a) Poor gun maintenance and misfiring, and inaccurate gun positioning and orientation may result in poor animal welfare.
- b) Post stun convulsions may make pithing difficult and hazardous.
- c) The method is difficult to apply in agitated animals.
- d) Repeated use of a cartridge powered gun may result in over-heating.
- e) Leakage of bodily fluids may present a biosecurity risk.
- f) Destruction of brain tissue may preclude diagnosis of some diseases.

5. Conclusions

The method is suitable for cattle, sheep, goats and pigs (except neonates), when followed by pithing or bleeding.

Captive bolt non-penetrating

1. Introduction

A non-penetrating captive bolt is fired from a gun powered by either compressed air or a blank cartridge. There is no free projectile.

Written Community comment

The first sentence of the paragraph should be replaced as follows:

"The gun should be placed on the front of the skull to deliver a percussive blow which produces unconsciousness in cattle (adults only), sheep, goats and pigs, and death in poultry and neonate sheep, goats and pigs up to a maximum live weight of 10 kg."

Justification

This paragraph should be in line with the conclusion under section 5.

The gun should be placed on the front of the skull to deliver a percussive blow which produces unconsciousness in cattle (adults only), sheep, goats and pigs, and death in poultry and neonate sheep, goats and pigs. Bleeding should be performed as soon as possible after the blow to ensure the death of the animal.

2. Requirements for effective use

- a) For cartridge powered and compressed air guns, the bolt velocity should be appropriate to the species and type of animal, in accordance with the recommendations of the manufacturer.
- b) Captive bolt guns should be frequently cleaned and maintained in good working condition.
- c) More than one gun may be necessary to avoid overheating and a back-up gun should be available in the event of an ineffective shot.
- d) Animals should be restrained; at a minimum mammals should be penned for cartridge powered guns and in a race for compressed air guns; birds should be restrained in cones, shackles, crushes or by hand.
- e) The operator should ensure that the head of the animal is accessible.
- f) The operator should fire the captive bolt at right angles to the skull in the optimal position (figures 1-4).
- g) To ensure death in non-neonate mammals, bleeding should be performed as soon as possible after *stunning*.
- h) Animals should be monitored continuously after *stunning* until death to ensure the absence of brain stem reflexes.

3. Advantages

- a) The method induces an immediate onset of unconsciousness, and death in birds and neonate mammals.

b) Mobility of equipment reduces the need to move animals.

4. Disadvantages

- a) As consciousness can be regained quickly in non-neonate mammals, they should be bled as soon as possible after *stunning*.
- b) Laying hens in cages have to be removed from their cages and most birds have to be restrained.
- c) Poor gun maintenance and misfiring, and inaccurate gun positioning and orientation may result in poor animal welfare.
- d) Post stun convulsions may make bleeding difficult and hazardous.
- e) Difficult to apply in agitated animals; such animals may be sedated in advance of the *killing* procedure.
- f) Repeated use of a cartridge powered gun may result in over-heating.
- g) Bleeding may present a biosecurity risk.

5. Conclusions

- a) The method is suitable for poultry, and neonate sheep, goats and pigs up to a maximum weight of 10 kg.

Article 3.7.6.9.

Maceration

1. Introduction

Maceration, utilising a mechanical apparatus with rotating blades or projections, causes immediate fragmentation and death in day-old poultry and embryonated eggs.

2. Requirements

- a) Maceration requires specialised equipment which should be kept in excellent working order.
- b) The rate of introducing the birds should not allow the equipment to jam, birds to rebound from the blades or the birds to suffocate before they are macerated.

3. Advantages

- a) Procedure results in immediate death.
- b) Large numbers can be killed quickly.

4. Disadvantages

- a) Specialised equipment is required.
- b) Macerated tissues may present biosecurity or human health risks.

c) The cleaning of the equipment can be a source of contamination.

5. Conclusion

The method is suitable for *killing* day-old poultry and embryonated eggs.

Article 3.7.6.10.

Electrical – two-stage application

1. Introduction

A two stage application of electric current comprises firstly an application of current to the head by scissor-type tongs, immediately followed by an application of the tongs across the chest in a position that spans the heart.

The application of sufficient electric current to the head will induce 'tonic/clonic' epilepsy and unconsciousness. Once the animal is unconscious, the second stage will induce ventricular fibrillation (cardiac arrest) resulting in death. The second stage (the application of low frequency current across the chest) should only be applied to unconscious animals to prevent unacceptable levels of pain.



Figure 5. Scissor-type stunning tongs.

2. Requirements for effective use

a) The stunner control device should generate a low frequency (AC sine wave 50 Hz) current with a minimum voltage and current as set out in the following table:

Animal	Minimum voltage (V)	Minimum current (A)
Cattle	220	1.5
Sheep	220	1.0
Pigs > 6 weeks	220	1.3
Pigs < 6 weeks	125	0.5

- b) Appropriate protective clothing (including rubber gloves and boots) should be worn.
- c) Animals should be restrained, at a minimum free-standing in a pen, close to an electrical supply.
- d) Two team members are required, the first to apply the electrodes and the second to manipulate the position of the animal to allow the second application to be made.

Written Community comment

In paragraph (e) the figure of "3 seconds" should be replaced by "10 seconds".

Justification

Duration of exposure should be extended here as disease control situation is usually not followed by another method of killing. Monitoring the effectiveness of the killing may be neglected because of the large number of animals to be killed. A margin of security should be therefore provided in order to ascertain that the killing is ensured for all animals.

- e) A *stunning* current should be applied via scissor-type stunning tongs in a position that spans the brain for a minimum of 3 seconds; immediately following the application to the head, the electrodes should be transferred to a position that spans the heart and the electrodes applied for a minimum of 3 seconds.
- f) Electrodes should be cleaned regularly and after use, to enable optimum electrical contact to be maintained.
- g) Animals should be monitored continuously after *stunning* until death to ensure the absence of brain stem reflexes.
- h) Electrodes should be applied firmly for the intended duration of time and pressure not released until the stun is complete.

3. Advantages

- a) The application of the second stage minimises post-stun convulsions and therefore the method is particularly effective with pigs.
- b) Non-invasive technique minimises biosecurity risk.

4. Disadvantages

- a) The method requires a reliable supply of electricity.
- b) The electrodes must be applied and maintained in the correct positions to produce an effective stun and kill.
- c) Most stunner control devices utilise low voltage impedance sensing as an electronic switch prior to the application of high voltages; in unshorn sheep, contact impedance may be too high to switch on the required high voltage (especially during stage two).
- d) The procedure may be physically demanding, leading to operator fatigue and poor electrode placement.

5. Conclusion

The method is suitable for calves, sheep and goats, and especially for pigs (over one week of age).

Article 3.7.6.11.

Electrical single application

1. Method 1

Method 1 comprises the single application of sufficient electrical current to the head and back, to simultaneously stun the animal and fibrillate the heart. Provided sufficient current is applied in a position that spans both the brain and heart, the animal will not recover consciousness.

- a) Requirements for effective use
 - i) The stunner control device should generate a low frequency (30 – 60 Hz) current with a minimum voltage of 250 volts true RMS under load.

Written Community comment

In paragraph (ii) the figure of "3 seconds" should be replaced by "10 seconds".

Justification

Duration of exposure should be extended here as disease control situation is usually not followed by another method of killing. Monitoring the effectiveness of the killing may be neglected because of the large number of animals to be killed. A margin of security should be therefore provided in order to ascertain that the killing is ensured for all animals.

- ii) Appropriate protective clothing (including rubber gloves and boots) should be worn.
 - iii) Animals should be individually and mechanically restrained close to an electrical supply as the maintenance of physical contact between the *stunning* electrodes and the animal is necessary for effective use.
 - iv) The rear electrode should be applied to the back, above or behind the heart, and then the front electrode in a position that is forward of the eyes, with current applied for a minimum of 3 seconds.
 - v) Electrodes should be cleaned regularly between animals and after use, to enable optimum electrical contact to be maintained.
 - vi) Water or saline may be necessary to improve electrical contact with sheep.
 - vii) An effective stun and kill should be verified by the absence of brain stem reflexes.
- b) Advantages
- i) Method 1 stuns and kills simultaneously.
 - ii) It minimises post-stun convulsions and therefore is particularly effective with pigs.
 - iii) A single team member only is required for the application.
 - iv) Non-invasive technique minimises biosecurity risk.
- c) Disadvantages
- i) Method 1 requires individual mechanical animal *restraint*.
 - ii) The electrodes must be applied and maintained in the correct positions to produce an effective stun and kill.
 - iii) Method 1 requires a reliable supply of electricity.
- d) Conclusion

Method 1 is suitable for calves, sheep, goats, and pigs (over 1 week of age).

2. Method 2

Method 2 stuns and kills by drawing inverted and shackled poultry through an electrified waterbath stunner. Electrical contact is made between the 'live' water and earthed shackle and, when sufficient current is applied, poultry will be simultaneously stunned and killed.

- a) Requirements for effective use
- i) A mobile waterbath stunner and a short loop of processing line are required.

- ii) A low frequency (50-60 Hz) current applied for a minimum of 3 seconds is necessary to stun and kill the birds.
- iii) Poultry need to be manually removed from their cage, house or yard, inverted and shackled onto a line which conveys them through a waterbath stunner with their heads fully immersed.
- iv) The required minimum currents to stun and kill dry birds are:
 - Quail - 100 mA/bird
 - Chickens – 160 mA/bird
 - Ducks & Geese – 200 mA/bird
 - Turkeys – 250 mA/bird.

A higher current is required for wet birds.
- v) An effective stun and kill should be verified by the absence of brain stem reflexes.

b) Advantages

- i) Method 2 stuns and kills simultaneously.
- ii) It is capable of processing large numbers of birds reliably and effectively.
- iii) This non-invasive technique minimises biosecurity risk.

c) Disadvantages

- i) Method 2 requires a reliable supply of electricity.
- ii) Handling, inversion and shackling of birds are required.

d) Conclusion

Method 2 is suitable for large numbers of poultry.

3. Method 3

Method 3 comprises the single application of sufficient electrical current to the head of poultry in a position that spans the brain, causing unconsciousness; this is followed by a *killing* method (Article 3.7.6.17.).

a) Requirements for effective use

- i) The stunner control device should generate sufficient current (more than 600 mA/ duck, more than 300 mA/bird) to stun.
- ii) Appropriate protective clothing (including rubber gloves and boots) should be worn.
- iii) Birds should be restrained, at a minimum manually, close to an electrical supply.

Written Community comment

The paragraph (iv) should not be deleted and the figure of 3 seconds should be replaced by 7 seconds.

Justification

See the European Food Safety Authority report. P. 120

http://www.efsa.europa.eu/en/science/ahaw/ahaw_opinions/495.html

~~iv) A *stunning* current should be applied in a position that spans the brain for a minimum of 3 seconds; immediately following this application, the birds should be killed (Article 3.7.6.17).~~

iv) Electrodes should be cleaned regularly and after use, to enable optimum electrical contact to be maintained.

v) Birds should be monitored continuously after *stunning* until death to ensure the absence of brain stem reflexes.

b) Advantages

Non-invasive technique (when combined with cervical dislocation) minimises biosecurity risk.

c) Disadvantages

i) Method 3 requires a reliable supply of electricity and is not suitable for large-scale operations.

ii) The electrodes must be applied and maintained in the correct position to produce an effective stun.

iii) Birds must be individually restrained.

iv) It must be followed by a *killing* method.

d) Conclusion

Method 3 is suitable for small numbers of poultry.

Article 3.7.6.12.
(under study)

CO₂ / air mixture

1. Introduction

Written Community comment

The text "should be used whenever possible, as it" in the second sentence should be deleted.

Justification

As the method is under study, all animal welfare aspects have not been fully assessed and some other methods may be preferable depending on the circumstances.

Controlled atmosphere *killing* is performed by exposing animals to a predetermined gas mixture, either by placing them in a gas-filled *container* or apparatus (Method 1) or by the gas being introduced into a poultry house (Method 2). Method 2 should be used whenever possible, as it eliminates welfare issues resulting from the need to manually remove live birds.

Inhalation of carbon dioxide (CO₂) induces respiratory and metabolic acidosis and hence reduces the pH of cerebrospinal fluid (CSF) and neurones thereby causing unconsciousness and, after prolonged exposure, death.

2. Method 1

The animals are placed in a gas-filled *container* or apparatus.

- a) Requirements for effective use in a *container* or apparatus
 - i) *Containers* or apparatus should allow the required gas concentration to be maintained and accurately measured.
 - ii) When animals are exposed to the gas individually or in small groups in a *container* or apparatus, the equipment used should be designed, constructed, and maintained in such a way as to avoid injury to the animals and allow them to be observed.
 - iii) Animals can also be to low concentrations [as low concentrations are not aversive] and the concentration could be increased afterwards and the animals then held in the higher concentration until death is confirmed.
 - iv) Team members should ensure that there is sufficient time allowed for each batch of animals to die before subsequent ones are introduced into the *container* or apparatus.
 - iv) *Containers* or apparatus should not be overcrowded and measures are needed to avoid animals suffocating by climbing on top of each other.
- b) Advantages
 - i) CO₂ is readily available.
 - ii) Application methods are simple.
- c) Disadvantages
 - i) The need for properly designed *container* or apparatus.
 - ii) The aversive nature of high CO₂ concentrations.
 - iii) No immediate loss of consciousness.
 - iv) The risk of suffocation due to overcrowding.
 - v) Difficulty in verifying death while the animals are in the *container* or apparatus.

d) Conclusion

Method 1 is suitable for use in poultry and neonatal sheep, goats and pigs.

3. Method 2

The gas is introduced into a poultry house.

a) Requirements for effective use in a poultry house

- i) Prior to introduction of the CO₂ the poultry house should be appropriately sealed to allow control over the gas concentration.
- ii) The house should be gradually filled with CO₂ so that all birds are exposed to a concentration of >40% until they are dead; a vaporiser may be required to prevent freezing.
- iii) Devices should be used to accurately measure the gas concentration at the maximum height accommodation of birds.

b) Advantages

- i) Applying gas to birds *in situ* eliminates the need to manually remove live birds.
- ii) CO₂ is readily available.
- iii) Gradual raising of CO₂ concentration minimises the aversiveness of the induction of unconsciousness.

c) Disadvantages

- i) It is difficult to determine volume of gas required to achieve adequate concentrations of CO₂ in some poultry houses.
- ii) It is difficult to verify death while the birds are in the poultry house.

d) Conclusion

Method 2 is suitable for use in poultry in closed-environment sheds.

Article 3.7.6.13.

Nitrogen and/or inert gas mixed with CO₂

1. Introduction

CO₂ may be mixed in various proportions with nitrogen or an inert gas (e.g., argon), and the inhalation of such mixtures leads to hypercapnic-hypoxia and death when the oxygen concentration by volume is ≤2%. This method involves the introduction of animals into a *container* or apparatus containing the gases. Such mixtures do not induce immediate loss of consciousness, therefore the aversiveness of various gas mixtures containing high concentrations of CO₂ and the respiratory distress occurring during the induction phase, are important animal welfare considerations.

Pigs and poultry appear not to find low concentrations of CO₂ strongly aversive, and a mixture of nitrogen or argon with ≤30% CO₂ by volume and ≤2% O₂ by volume can be used for *killing* poultry and neonatal sheep, goats and pigs.

2. Requirements for effective use

- a) *Containers* or apparatus should allow the required gas concentrations to be maintained, and the O₂ and CO₂ concentrations accurately measured during the *killing* procedure.
- b) When animals are exposed to the gases individually or in small groups in a *container* or apparatus, the equipment used should be designed, constructed, and maintained in such a way as to avoid injury to the animals and allow them to be observed.
- c) Animals should be introduced into the *container* or apparatus after it has been filled with the required gas concentrations (with $\leq 2\%$ O₂), and held in this atmosphere until death is confirmed.
- d) Team members should ensure that there is sufficient time allowed for each batch of animals to die before subsequent ones are introduced into the *container* or apparatus.
- e) *Containers* or apparatus should not be overcrowded and measures are needed to avoid animals suffocating by climbing on top of each other.

3. Advantages

Low concentrations of CO₂ cause little aversiveness and, in combination with nitrogen or an inert gas, produces a fast induction of unconsciousness.

4. Disadvantages

- a) A properly designed *container* or apparatus is needed.
- b) It is difficult to verify death while the animals are in the *container* or apparatus.
- c) There is no immediate loss of consciousness.
- d) Exposure times required to kill are considerable.

5. Conclusion

The method is suitable for poultry and neonatal sheep, goats and pigs.

Article 3.7.6.14.

Nitrogen and/or inert gasses

1. Introduction

This method involves the introduction of animals into a *container* or apparatus containing nitrogen or an inert gas such as argon. The controlled atmosphere produced leads to unconsciousness and death from hypoxia.

Research has shown that hypoxia is not aversive to pigs and poultry, and it does not induce any signs of respiratory distress prior to loss of consciousness.

2. Requirements for effective use

- a) *Containers* or apparatus should allow the required gas concentrations to be maintained, and the O₂ concentration accurately measured.
- b) When animals are exposed to the gases individually or in small groups in a *container* or apparatus, the equipment used should be designed, constructed, and maintained in such a way as to avoid injury to the animals and allow them to be observed.

- c) Animals should be introduced into the *container* or apparatus after it has been filled with the required gas concentrations (with $\leq 2\%$ O₂), and held in this atmosphere until death is confirmed.
- d) Team members should ensure that there is sufficient time allowed for each batch of animals to die before subsequent ones are introduced into the *container* or apparatus.
- e) *Containers* or apparatus should not be overcrowded and measures are needed to avoid animals suffocating by climbing on top of each other.

3. Advantages

Animals are unable to detect nitrogen or inert gases, and the induction of hypoxia by this method is not aversive to animals.

4. Disadvantages

- a) A properly designed *container* or apparatus is needed.
- b) It is difficult to verify death while the animals are in the *container* or apparatus.
- c) There is no immediate loss of consciousness.
- d) Exposure times required to kill are considerable.

5. Conclusion

The method is suitable for poultry and neonatal sheep, goats and pigs.

Article 3.7.6.15.

Lethal injection

1. Introduction

A lethal injection using high doses of anaesthetic and sedative drugs causes CNS depression, unconsciousness and death. In practice, barbiturates in combination with other drugs are commonly used.

2. Requirements for effective use

- a) Doses and routes of administration that cause rapid loss of consciousness followed by death should be used.
- b) Prior sedation may be necessary for some animals.
- c) Intravenous administration is preferred, but intraperitoneal or intramuscular administration may be appropriate, especially if the agent is non-irritating.
- d) Animals should be restrained to allow effective administration.
- e) Animals should be monitored to ensure the absence of brain stem reflexes.

3. Advantages

- a) The method can be used in all species.

b) Death can be induced smoothly.

4. Disadvantages

- a) *Restraint* and/or sedation may be necessary prior to injection.
- b) Some combinations of drug type and route of administration may be painful, and should only be used in unconscious animals.
- c) Legal requirements and skill/training required may restrict use to *veterinarians*.
- d) Contaminated carcasses may present a risk to other wild or domestic animals.

5. Conclusion

The method is suitable for *killing* small numbers of cattle, sheep, goats, pigs and poultry.

Article 3.7.6.16.

Addition of anaesthetics to feed or water

1. Introduction

An anaesthetic agent which can be mixed with poultry feed or water may be used to kill poultry in houses. Poultry which are only anaesthetised need to be killed by another method such as cervical dislocation.

2. Requirements for effective use

- a) Sufficient quantities of anaesthetic need to be ingested rapidly for effective response.
- b) Intake of sufficient quantities is facilitated if the birds are fasted or water is withheld.
- c) Must be followed by *killing* (see Article 3.7.6.17) if birds are anaesthetised only.

3. Advantages

- a) Handling is not required until birds are anaesthetised.
- b) There may be biosecurity advantages in the case of large numbers of diseased birds.

4. Disadvantages

- a) Non-target animals may accidentally access the medicated feed or water when provided in an open environment.
- b) Dose taken is unable to be regulated and variable results may be obtained.
- c) Animals may reject adulterated feed or water due to illness or adverse flavour.
- d) The method may need to be followed by *killing*.
- e) Care is essential in the preparation and provision of treated feed or water, and in the disposal of uneaten treated feed/water and contaminated carcasses.

5. Conclusion

The method is suitable for *killing* large numbers of poultry in houses.

Article 3.7.6.17.

Cervical dislocation and decapitation

1. Cervical dislocation (manual and mechanical)

a) Introduction

Written Community comment

The following text should be added after the first paragraph:

"However, conscious birds of less than 3 kilograms in case of small numbers of birds where other methods are not available or impracticable, may be killed using cervical dislocation in a way that the blood vessels of the neck are severed and death is instantaneous."

Justification

Cervical dislocation is an effective method of killing without prior stunning if used by skilled operators on small birds and/or for a limited number of animals as to prevent operators' fatigue.

Unconscious poultry may be killed by either manual cervical dislocation (stretching) or mechanical neck crushing with a pair of pliers. Both methods result in death from cerebral anoxia due to cessation of breathing and/or blood supply to the brain.

b) Requirements for effective use

- i) *Killing* should be performed either by manually or mechanically stretching the neck to sever the spinal cord or by using mechanical pliers to crush the cervical vertebrae with consequent major damage to the spinal cord.
- ii) Consistent results require strength and skill so team members should be rested regularly to ensure consistently reliable results.
- iii) Birds should be monitored continuously until death to ensure the absence of brain stem reflexes.

c) Advantages

- i) It is a non-invasive *killing* method.
- ii) It can be performed manually on small birds.

d) Disadvantages

- i) Operator fatigue.

Written Community comment

The following text should be added to point (ii):

"Its use should be avoided in any case for birds over 3 kg of live weight."

Justification

Physical efforts required to properly perform the method increase with the size of the birds. (see p. 195 EFSA report)

- ii) The method is more difficult in larger birds.
- iii) Requires trained personnel to perform humanely.

2. Decapitation

a) Introduction

Decapitation results in death by cerebral ischaemia using a guillotine or knife.

b) Requirements for effective use

The required equipment should be kept in good working order.

c) Advantages

The technique is effective and does not require monitoring.

d) Disadvantages

The working area is contaminated with body fluids, which increases biosecurity risks.

Written Community comment

The conclusion should not be deleted as the method should only be used for unconscious animals as previously recommended.

Justification

There is no clear scientific evidence that this method induces immediate loss of consciousness.

e) ~~Conclusion~~

~~This method is suitable for *killing* unconscious poultry.~~

Article 3.7.6.18.

Pithing and bleeding

1. Pithing

a) Introduction

Pithing is a method of *killing* animals which have been stunned by a penetrating captive bolt, without immediate death. Pithing results in the physical destruction of the brain and upper regions of the spinal cord, through the insertion of a rod or cane through the bolt hole.

b) Requirements for effective use

- i) Pithing cane or rod is required.
- ii) An access to the head of the animal and to the brain through the skull is required.
- iii) Animals should be monitored continuously until death to ensure the absence of brain stem reflexes.

c) Advantages

The technique is effective in producing immediate death.

- d) Disadvantages
 - i) A delayed and/or ineffective pithing due to convulsions may occur.
 - ii) The working area is contaminated with body fluids, which increases biosecurity risks.

2. Bleeding

- a) Introduction

Written Community comments

(1) The following sentence should be add at the beginning of the paragraph:

"Bleeding should only be used for killing unconscious animals".

(2) The following sentence should be added to the end of the paragraph:

"Bleeding out should be completed and any incision made should ensure the complete severance off both carotid arteries, or the vessels from which they arise (e.g. chest stick)."

Justification

(1) Bleeding without prior stunning is not necessary for animal disease control purposes and should not be recommended as acceptable from a welfare point of view.

(2) See EFSA report.

Bleeding is a method of *killing* animals through the severance of the major blood vessels in the neck or chest that results in a rapid fall in blood pressure, leading to cerebral ischemia and death.

- b) Requirements for effective use
 - i) A sharp knife is required.
 - ii) An access to the neck or chest of the animal is required.
 - iii) Animals should be monitored continuously until death to ensure the absence of brain stem reflexes.
- c) Advantages

The technique is effective in producing death after an effective *stunning* method which does not permit pithing.
- d) Disadvantages
 - a) A delayed and/or ineffective bleeding due to convulsions may occur.
 - b) The working area is contaminated with body fluids, which increases biosecurity risks.

TEXTS THAT WERE EVENTUALLY NOT SUBMITTED FOR ADOPTION AT THE 75TH GENERAL SESSION AND PROPOSED FOR FURTHER COMMENTS

The numbering used is that of the Code Commission Report of its March 2007 meeting.

11. Classical swine fever

Community comments:

This chapter has been fundamentally reviewed by the Code Commission, but this new draft needs to be revised in depth.

Therefore the Community proposes an alternative version.

16. Salmonellosis

Guidelines on the Detection, Control and Prevention of *Salmonella* Enteritidis and *S. Typhimurium* in Poultry Producing Eggs for Human Consumption

Community position:

The Community acknowledges the excellent work of the OIE in the field of food safety related to pre-harvest animal production.

Nevertheless, the Community proposes some essential modifications to the proposed text, which is not satisfactory for its practical implementation.

CLASSICAL SWINE FEVER

Community comments:

This chapter has been fundamentally reviewed by the Code Commission, but this new draft needs to be revised again.

The proposal fully introduces the concept of a compartment free of CSF, which the Community supports, but the status of a country or zone free of CSF with possible infection but a controlled situation in wild pigs must be maintained as long as regionalisation is not fully accepted by all members, and also in analogy with other diseases in the Code with wildlife reservoirs (AI, FMD, ND...). For reasons of consistency the concept can simply be re-included in art. 2.6.7.3. The Community is also convinced that there is a need for a reference to swill feeding of wild pigs for the status of country or zone free of CSF with possible infection in the wild pigs.

Other changes have been made for the sake of clarity, consistency and practicability. Veterinary Administration has consistently been replaced by Veterinary Authority. The Community believes that the provision in Article 2.6.7.12., point 1, that meat comes from animals which have been kept in a country, zone or compartment free of CSF since birth or for at least the past 3 months is not appropriate, as the delay to recover the free status is already 3 months. Point 1 has thus been modified in accordance with similar provisions in other Chapters of the Code.

Therefore the Community proposes the following alternative version. In order to simplify the Code Commission's work, the version of the Code Commission report of March 2007 has been used, the changes proposed by the Community having been highlighted in green.

Article 2.6.7.1.

The pig is the only natural host for classical swine fever (CSF) virus. The definition of pig includes all varieties of *Sus scrofa*, both domestic **breeds** and wild **boar**. For the purposes of this chapter, a distinction is made between domestic pigs (permanently captive and **owned** ~~farmed~~ free-range pigs) and wild pigs (including feral pigs).

Pigs exposed to CSF virus prenatally may be persistently infected throughout life and may have an *incubation period* of several months before showing signs of disease. Pigs exposed postnatally have an *incubation period* of 7-10 days, and are usually infective between post-infection days 5 and 14, but up to 3 months in cases of chronic infections.

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

Article 2.6.7.2.

The CSF status of a country, *zone* or *compartment* can only be determined after considering the following criteria in domestic and wild pigs, as applicable:

1. ~~a risk assessment has been conducted, identifying all potential factors for CSF occurrence and their historic perspective;~~
21. CSF should be notifiable in the whole country, and all clinical signs suggestive of CSF should be subjected to field and/or laboratory investigations;
32. an on-going awareness programme should be in place to encourage reporting of all *cases* suggestive of

CSF;

43. the *Veterinary Administration Authority* should have current knowledge of, and authority over, all domestic pigs in the country, *zone* or *compartment*;
54. the *Veterinary Administration Authority* should have current knowledge about the population and habitat of wild pigs in the country or *zone*.

Article 2.6.7.3.

CSF free country, zone or compartment

1. ~~CSF free status~~ CSF free status in the absence of an outbreak

a) ~~a)~~ Historically free status

A country, ~~or zone or compartment~~ may be considered free from the disease ~~after conducting a risk assessment as referred to in Article 2.6.7.2. but~~ without formally applying a specific surveillance programme, if the provisions of Article 3.8.1.6. are complied with.

b)

~~2.~~ Free status as a result of a specific surveillance programme

~~A country, zone or compartment which does not meet the conditions of point 1 above may be considered free from CSF when a risk assessment as referred to in Article 2.6.7.2. has been conducted, surveillance in accordance with Appendix 3.8.8. has been in place for at least 12 months, and when no outbreak has been observed for at least 12 months.~~

~~3.~~ 2. CSF free status following an outbreak b) Free status as a result of an eradication programme

A country, ~~or zone or compartment~~ which does not meet the conditions of point a) ~~a) 1.~~ or b) ~~2.~~ above or a ~~compartment~~ may be considered free from CSF ~~when:~~ if surveillance in accordance with Appendix 3.8.8. has been in place and after a *risk assessment* as referred to in Article 2.6.7.2. has been conducted, and

a) where a *stamping out policy* without vaccination is practised and no *outbreak* has been observed in domestic pigs for at least 6 months;

OR

b) where a *stamping out policy* with vaccination is practised, and either:

i) vaccinated pigs are slaughtered, and no *outbreak* has been observed in domestic pigs for at least 6 months after the last vaccinated pig was slaughtered; or

ii) where there are validated means of distinguishing between vaccinated and infected pigs, no *outbreak* has been observed in domestic pigs for at least 6 months;

OR

e) where a vaccination strategy is practised without a *stamping out policy*;

- i) vaccination has been banned in all domestic pigs in the country, ~~zone~~ or ~~compartment~~ for at least 12 months, unless there are validated means of distinguishing between vaccinated and infected pigs;
- ii) if vaccination has been practised within the past 5 years, surveillance in accordance with Appendix 3.8.8. has been in place for at least 6 months to demonstrate the absence of infection within the population of domestic pigs 6 months to one year old; and
- iii) no ~~outbreak~~ has been observed in domestic pigs for at least 12 months;

AND

in all cases, based on surveillance in accordance with Appendix 3.8.8., CSF infection is not known to occur in any wild pig population in the country or ~~zone~~.

- i) there has been no outbreak of CSF during the past 12 months;
- ii) no evidence of CSFV infection has been found during the past 12 months;
- iii) no vaccination against CSF has been carried out during the past 12 months;
- iv) surveillance in accordance with appendix 3.8.8. has been in place in domestic pigs for 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 CSF status of the wild pig population and:

- v) there has been no clinical evidence, or virological evidence of CSF in wild pigs during the past 12 months;
- vi) no seropositive wild pigs have been detected in the age class 6–12 months during the past 12 months;
- vii) there has been no vaccination in wild pigs for the past 12 months;
- viii) imported wild pigs comply with the relevant requirements in Article 2.6.7.7.

OR

- viii) a programme for the management of CSF in wild pigs is in place with measures to control the disease in the wild pig population, taking into account the presence of natural boundaries, the ecology of the wild pig population, and a risk assessment of the spread;
- ix) the domestic pig population is separated from the wild pig population through biosecurity measures to prevent transmission of CSF from wild pigs to domestic pigs.
- x) the feeding of swill to wild pigs is forbidden

AND

xi) imported wild pigs comply with the relevant requirements in Article 2.6.7.7.

Article 2.6.7.4.

Country or zone free of CSF in domestic pigs but with infection in the a wild pig population

Requirements in points 23a to 23c of Article 2.6.7.3., as relevant, are complied with. As CSF infection may be present in the wild pig population, the following additional conditions are complied with:

1. a programme for the management of CSF in wild pigs is in place, taking into account the measures in place to manage the disease in the wild pig population, the presence of natural boundaries, the ecology of the wild pig population, and an assessment of the risk of disease spread;
2. zoning or compartmentalisation is applied the domestic pig population must be separated from the infected wild pig population through biosecurity measures to prevent transmission of CSF from wild pigs to domestic pigs.

Article 2.6.7.5.4.

Recovery of free status

Should a CSF *outbreak* occur in a previously free country, zone or compartment, the free status of the country, zone or compartment may be restored not less than 30 days after completion of a stamping-out policy where surveillance in accordance with Appendix 3.8.8. has been carried out with negative results, either:

If emergency vaccination has been practised within the CSF domestic pig control area, recovery of the free status cannot occur before all the vaccinated pigs have been slaughtered, unless there are validated means of distinguishing between vaccinated and infected pigs:

1. 3 months after the last case where a stamping-out policy without vaccination is practised;

OR

2. where a stamping-out policy with emergency vaccination is practised:

- i) 3 months after the last case and the slaughter of all vaccinated animals, or
- ii) 3 months after the last case without the slaughter of vaccinated animals where there are validated means of distinguishing between vaccinated and infected pigs;

OR

3. where a stamping-out policy is not practised, the provisions of Article 2.6.7.3 b) should be followed;

AND

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

OR

points viii) to x) of article 2.6.7.3 b) are complied with.

!

Article 2.6.7.6.

Country or zone free of CSF in wild pigs

A country or ~~zone~~ may be considered free from CSF in wild pigs when:

1. the domestic pig population in the country or ~~zone~~ is free from CSF infection;
2. surveillance in accordance with Appendix 3.8.8. has been in place to determine the CSF status of the wild pig population in the country, and in the country or ~~zone~~:
 - a) there has been no clinical evidence, nor virological evidence of CSF in wild pigs during the past 12 months;
 - b) no seropositive wild pigs have been detected in the age class 6-12 months during the past 12 months;
3. there has been no vaccination in wild pigs for the past 12 months;
4. the feeding of swill to wild pigs is forbidden, unless the swill has been treated to destroy any CSF virus that may be present, in conformity with one of the procedures referred to in Article 3.6.4.1.;
5. imported wild pigs comply with the relevant requirements set forth in the present chapter.

Article 2.6.7.7.

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

for domestic pigs

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

1. showed no clinical sign of CSF on the day of shipment;
2. were kept in a country, zone or compartment free of CSF since birth or for at least the past 3 months;
3. have not been vaccinated against CSF, nor are they the progeny of vaccinated sows, unless there are validated means of distinguishing between vaccinated and infected pigs.

Article 2.6.7.8.

When importing from countries free of CSF in domestic pigs but with infection in the wild pig population, *Veterinary Administrations* should require:

for domestic pigs

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

1. were kept in a country or zone free of CSF in domestic pigs since birth or for at least the past 3 months;
2. have not been vaccinated against CSF, nor are they the progeny of vaccinated sows, unless there are validated means of distinguishing between vaccinated and infected pigs;
3. come from a CSF free zone or compartment;
4. showed no clinical sign of CSF on the day of shipment.

Article 2.6.7.96.

When importing from countries or zones ~~not free of~~ with CSF ~~infection in domestic pigs~~, *Veterinary Administrations* *Authorities* should require:
for domestic pigs

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

1. ~~have not been vaccinated against CSF nor are they the progeny of vaccinated sows, unless there are validated means of distinguishing between vaccinated and infected pigs~~ showed no clinical sign of CSF on the day of shipment;
2. were kept since birth or for the past 3 months in a CSF free compartment;
3. ~~showed no clinical sign of CSF on the day of shipment~~ have not been vaccinated against CSF nor are they the progeny of vaccinated sows, unless there are validated means of distinguishing between vaccinated and infected pigs.

Article 2.6.7.407.

When importing from countries or zones free of CSF, *Veterinary* ~~*Administrations*~~ *Authorities* should require:
for wild pigs

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

1. showed no clinical sign of CSF on the day of shipment;
2. have been captured in a country or zone free from CSF;
3. have not been vaccinated against CSF, unless there are validated means of distinguishing between vaccinated and infected pigs;

and, if the *zone* where the animal has been captured is adjacent to a *zone* with infection in wild pigs:

4. were kept in a *quarantine station* for 40 days prior to shipment, and were subjected to a virological test and a serological test performed at least 21 days after entry into the *quarantine station*, with negative results.

Article 2.6.7.418.

When importing from countries, zones or compartments free of CSF, *Veterinary Administrations Authorities* 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 CSF since birth or for at least 3 months prior to collection;
 - b) showed no clinical sign of CSF on the day of collection of the semen;
2. the semen was collected, processed and stored in conformity with the provisions of Appendix 3.2.2.

Article 2.6.7.12.

~~When importing from countries free of CSF in domestic pigs but with infection in the wild pig population, *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 CSF in domestic pigs since birth or for at least 3 months prior to collection;~~
 - ~~b) showed no clinical sign of CSF on the day of collection of the semen and for the following 40 days;~~
- ~~2. the semen was collected, processed and stored in conformity with the provisions of Appendix 3.2.2.~~

Article 2.6.7.13.

When importing from countries or zones considered infected with not free of CSF in domestic pigs, *Veterinary Administrations Authorities* 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 compartment free of CSF in domestic pigs since birth or for at least 3 months prior to collection;
 - b) showed no clinical sign of CSF on the day of collection of the semen and for the following 40 days;
 - c) have not been vaccinated against CSF, unless there are validated means of distinguishing between vaccinated and infected pigs, and were subjected to a serological test performed at least 21 days after collection, with negative results;
2. the semen was collected, processed and stored in conformity with the provisions of Appendix 3.2.2.

Article 2.6.7. ~~1410~~.

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

for *in vivo* derived embryos of pigs

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

1. the donor females showed no clinical sign of CSF on the day of collection of the embryos;
2. the embryos were collected, processed and stored in conformity with the provisions of Appendix 3.3.1.

~~Article 2.6.7.15.~~

~~When importing from countries free of CSF in domestic pigs but with infection in the wild pig population, *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 CSF in domestic pigs since birth or for at least 3 months prior to collection;~~
 - ~~b) showed no clinical sign of CSF on the day of collection of the embryos;~~
- ~~2. the embryos were collected, processed and stored in conformity with the provisions of Appendix 3.3.1.~~

Article 2.6.7. ~~1611~~.

When importing from countries or zones ~~considered infected with~~ not free of CSF ~~in domestic pigs~~, *Veterinary Administrations Authorities* 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 compartment free of CSF ~~in domestic pigs~~ since birth or for at least 3 months prior to collection;
 - b) showed no clinical sign of CSF on the day of collection of the embryos and for the following 40 days;
 - c) have not been vaccinated against CSF, unless there are validated means of distinguishing between vaccinated and infected pigs, and were subjected, with negative results, to a serological test performed at least 21 days after collection;
2. the embryos were collected, processed and stored in conformity with the provisions of Appendix 3.3.1.

Article 2.6.7. ~~1712~~.

When importing from countries, zones or compartments free of CSF, *Veterinary Administrations Authorities* 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 CSF ~~since birth~~ or ~~which have been imported in accordance with Article 2.6.7.5 or Article 2.6.7.6~~ for at least the past 3 months;
2. have been slaughtered in an *approved abattoir*, 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 CSF.

Article 2.6.7.18.

~~When importing from countries or zones free of CSF in domestic pigs but with infection in the wild pig population, *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. were kept in a country, zone or compartment free of CSF in domestic pigs since birth or for at least the past 3 months;~~
- ~~2. have been slaughtered in an *approved abattoir*, have been subjected to ante-mortem and post-mortem inspections as described in the *Codex Alimentarius Code of Hygienic Practice for Meat* and have been found free of any sign suggestive of CSF.~~

Article 2.6.7.19.

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

for fresh meat of wild pigs

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

1. the entire consignment of meat comes from animals which:
 - a) have been killed in a country or zone free of CSF;
 - b) have been subjected to a post-mortem inspection as described in the *Codex Alimentarius Code of Hygienic Practice for Meat* in accordance with Appendix 3.10.1 in an approved examination centre, and have been found free of any sign suggestive of CSF;

and, if the *zone* where the animal has been killed is adjacent to a *zone* with infection in wild pigs:

2. a sample has been collected from every animal shot-killed, and has been subjected to a virological test and a serological test for CSF, with negative results.

Article 2.6.7. ~~2014~~

Veterinary ~~Administration~~ ~~Authorities~~ 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 2.6.7. ~~1712~~, ~~2.6.7.18~~ or 2.6.7. ~~1913~~, as relevant;
 - b) in a processing establishment:
 - i) approved by the *Veterinary ~~Administration~~ ~~Authority~~* for export purposes;
 - ii) processing only meat meeting the conditions laid down in Articles 2.6.7. ~~1712~~, ~~2.6.7.18~~ or 2.6.7. ~~1913~~, as relevant;

OR

2. have been processed in an establishment approved by the *Veterinary ~~Administration~~ ~~Authority~~* for export purposes so as to ensure the destruction of the CSF virus in conformity with one of the procedures referred to in Article 3.6.4.2.

Article 2.6.7. ~~2115~~

Veterinary ~~Administration~~ ~~Authorities~~ 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 2.6.7. ~~1712~~, ~~2.6.7.18~~ or 2.6.7. ~~1913~~, as relevant;
 - b) in a processing establishment:
 - i) approved by the *Veterinary ~~Administration~~ ~~Authority~~* 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~~ ~~Authority~~* for export purposes so as to ensure the destruction of the CSF virus in conformity with one of the procedures referred to in Article 3.6.4.2.

Article 2.6.7. ~~2216~~

Veterinary ~~Administration~~ Authorities of importing countries should require:

for bristles (from pigs)

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

1. come from a country, zone or compartment free of CSF; or
2. have been processed in an establishment approved by the *Veterinary ~~Administration~~ Authority* for export purposes so as to ensure the destruction of the CSF virus.

Article 2.6.7. 2317.

Veterinary ~~Administration~~ Authorities 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 CSF, or
 2. have been processed in an establishment approved by the *Veterinary ~~Administration~~ Authority* for export purposes so as to ensure the destruction of the CSF virus.
-

APPENDIX 3.8.8.

**GUIDELINES ON SURVEILLANCE FOR
CLASSICAL SWINE FEVER****Community comments:**

These Guidelines need to be revised in the light of the comments and proposed amendments to the Chapter. Thus, proposed amendments are indicated in the text below, in accordance to the Community comments on the Chapter.

The Community has also a general comment: the RT-PCR test is not enough put forward as a efficient and practical tool for CSF surveillance, as its high sensitivity allows an early detection, and should be introduced.

Article 3.8.8.1.

Introduction

This Appendix defines the principles and provides a guide on surveillance for classical swine fever (CSF) in accordance with Appendix 3.8.1., applicable to countries seeking recognition of freedom from CSF. This may be for the entire country or a *zone* within the country. Guidance for countries seeking reestablishment of freedom from CSF for the whole country or a *zone*, following an *outbreak*, as well as guidelines for demonstrating the maintenance of CSF free status are also provided. This Appendix complements Chapter 2.6.7.

The impact and epidemiology of CSF differ widely in different regions of the world, and it is, therefore, impossible to provide specific guidelines for all situations. It is axiomatic that the surveillance strategies employed for demonstrating freedom from CSF at an acceptable level of confidence will need to be adapted to the local situation. For example, the approach must be tailored in order to prove freedom from CSF for a country or *zone* where wild pigs provide a potential reservoir of infection, or where CSF is present in adjacent countries. The method must examine the epidemiology of CSF in the region concerned and adapt to the specific risk factors encountered. This should include provision of scientifically based supporting data. There is, therefore, latitude available to Member Countries to provide a well-reasoned argument to prove that absence of classical swine fever virus (CSFV) infection is assured at an acceptable level of confidence.

Surveillance for CSF should be in the form of a continuing programme designed to establish that the whole country or a *zone* within the country is free from CSFV infection. Consideration should be given to the specific characteristics of CSF epidemiology which include: the role of swill feeding and the impact of different production systems on disease spread, the role of semen in transmission of the virus, the lack of pathognomonic gross lesions and clinical signs, the frequency of clinically inapparent infections, the occurrence of persistent and chronic infections, and the genotypic, antigenic, and virulence variability exhibited by different strains of CSFV. Serological cross-reactivity with other pestiviruses has to be taken into consideration when interpreting data from serological surveys. A common route by which ruminant pestiviruses can infect pigs is the use of vaccines contaminated with bovine viral diarrhoea virus (BVDV).

For the purposes of this Appendix, virus infection means presence of CSFV as demonstrated directly by virus isolation, the detection of virus antigen or virus nucleic acid, or indirectly by seroconversion which is not the result of vaccination.

Article 3.8.8.2.

General conditions and methods

1. A surveillance system in accordance with Appendix 3.8.1. should be under the responsibility of the *Veterinary Administration*. A procedure should be in place for the rapid collection and transport of samples to an accredited laboratory as described in the *Terrestrial Manual*.
2. The CSF surveillance programme should:
 - a) include an early warning system throughout the production, marketing and processing chain for reporting suspicious cases. Farmers and workers, who have day-to-day contact with livestock, as well as diagnosticians, should report promptly any suspicion of CSF to the *Veterinary Authority*. They should be supported directly or indirectly (e.g. through private veterinarians or *veterinary para-professionals*) by government information programmes and the *Veterinary Administration*. Since many strains of CSFV do not induce pathognomonic gross lesions or clinical signs, cases in which CSF cannot be ruled out should be immediately investigated employing clinical, pathological, and laboratory diagnosis. This requires that sampling kits and other equipment are available to those responsible for surveillance. Personnel responsible for surveillance should be able to call for assistance from a team with expertise in CSF diagnosis, epidemiological evaluation, and control;
 - b) implement, when relevant, regular and frequent clinical inspections and serological testing of high-risk groups of animals (for example, where swill feeding is practised), or those adjacent to a CSF infected country or zone (for example, bordering areas where infected wild pigs are present).

An effective surveillance system will periodically identify suspicious cases that require follow-up and investigation to confirm or exclude that the cause of the condition is CSFV. The rate at which such suspicious cases are likely to occur will differ between epidemiological situations and cannot, therefore, be reliably predicted. Recognitions for freedom from CSFV infection should, as a consequence, provide details of the occurrence of suspicious cases and how they were investigated and dealt with. This should include the results of laboratory testing and the control measures to which the animals concerned were subjected during the investigation (quarantine, movement stand-still orders, etc.).

Article 3.8.8.3.

Surveillance strategies

1. Introduction

The target population for surveillance aimed at identifying *disease* and *infection* should include domestic and wild pig populations within the country or zone to be recognised as free from CSFV infection. Such surveillance may involve opportunistic testing of samples submitted for other purposes, but a more efficient and effective strategy is one which includes targeted surveillance.

Depending on the local epidemiological situation, targeted surveillance could be considered as more effective than a randomized surveillance strategy. Surveillance is targeted to the pig population which

presents the highest risk of infection (for example, swill fed farms, pigs reared outdoors or farms in proximity to infected wild pigs). Each country will need to identify its individual risk factors. These may include: temporal and spatial distribution of past *outbreaks*, pig movements and demographics, etc.

For reasons of cost, the longevity of antibody levels, as well as the existence of clinically inapparent infections and difficulties associated with differential diagnosis of other diseases, serology is often the most effective and efficient surveillance methodology. In some circumstances, which will be discussed later, clinical and virological surveillance may also have value.

The country should justify the surveillance strategy chosen as adequate to detect the presence of CSFV infection in accordance with Appendix 3.8.1. and the epidemiological situation. Cumulative survey results in combination with the results of passive surveillance, over time, will increase the level of confidence in the surveillance strategy. If a Member Country wishes to apply for recognition by other Member Countries of a specific *zone* within the country as being free from CSFV infection, the design of the surveillance strategy and the basis for any sampling process would need to be aimed at the population within the *zone*.

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

Irrespective of the survey design selected, the sensitivity and specificity of the diagnostic tests employed are key factors in the design, sample size determination and interpretation of the results obtained. Ideally, the sensitivity and specificity of the tests used should be validated for the vaccination/infection history and production class of animals in the target population.

Irrespective of the testing system employed, the surveillance system design should anticipate the occurrence of false positive reactions. This is especially true of the serological diagnosis of CSF because of the recognized cross-reactivity with ruminant pestiviruses. There needs to be an effective procedure for following up positives to ultimately determine with a high level of confidence, whether or not they are indicative of CSFV infection. This should involve confirmatory and differential tests for pestiviruses, as well as further investigations concerning the original sampling unit as well as animals which may be epidemiologically linked.

2. Clinical and virological surveillance

Beyond their role in targeted surveillance, clinical and virological surveillance for CSF has two aims: a) to shorten the period between introduction of CSF virus into a disease free country or *zone* and its detection, and b) to confirm that no unnoticed *outbreaks* have occurred.

One element of clinical surveillance involves the detection of clinical signs of CSF by close physical examination of susceptible animals. The spectrum of disease signs and gross pathology seen in CSF infections, along with the plethora of other agents that can mimic CSF, renders the value of clinical

examination alone somewhat inefficient as a surveillance tool. Nevertheless, clinical presentation should not be ignored as a tool for early detection; in particular, any cases where clinical signs or lesions consistent with CSF are accompanied by high morbidity and/or mortality should be investigated without delay. In CSFV infections involving low virulence strains, high mortality may only be seen in young animals.

In the past, clinical identification of cases was the cornerstone of early detection of CSF. However, emergence of low virulence strains of CSF, as well as new diseases - in particular post-weaning multisystemic wasting syndrome and porcine dermatitis and nephropathy syndrome have made such reliance less effective, and, in countries where such diseases are common, can add significant risk of masking the presence of CSF. In *zones* or countries where such diseases exist, careful clinical and virological surveillance of such cases should be applied.

Clinical signs and pathology of CSF infection will also vary considerably, depending on the strain of virus as well as host factors, such as age, nutrition and health status. These factors, along with the compounding effects of concurrent infections and disease caused by ruminant pestiviruses, dictate the need for laboratory testing in order to clarify the status of CSF suspects detected by clinical monitoring. The difficulties in detecting chronic disease manifested by non-specific clinical signs and delayed seroconversion and seronegativity, in persistently infected piglets, both of which may be clinically normal, makes virological investigation essential. As part of a herd investigation, such animals are likely to be in a minority and would not confound a diagnosis based on serology. Individually or as part of recently mixed batches, such animals may, however, escape detection by this method. A holistic approach to investigation, taking note of herd history, pig, personnel and vehicle movements and disease status in neighbouring *zones* or countries, can also assist in targeting surveillance in order to increase efficiency and enhance the likelihood of early detection.

The labour-intensive nature of clinical, pathological and virological investigations, along with the smaller 'window of opportunity' inherent in virus, rather than antibody detection, has, in the past, resulted in greater emphasis being placed on mass serological screening as the best method for surveillance. However, surveillance based on clinical and pathological inspection and virological testing should not be underrated. If targeted at high risk groups in particular, it provides an opportunity for early detection that can considerably reduce the subsequent spread of disease. Herds predominated by adult animals, such as nucleus herds and artificial insemination studs, are particularly useful groups to monitor, since infection by low virulence viruses in such groups may be clinically inapparent, yet the degree of spread may be high.

Clinical and virological monitoring may also provide a high level of confidence of rapid detection of disease if a sufficiently large number of clinically susceptible animals is examined. In particular, molecular detection methods are increasingly able to offer the possibility of such large-scale screening for the presence of virus, at reasonable cost.

Wild pigs and, in particular, those with a wholly free-living existence, rarely present the opportunity for clinical observation, but should form part of any surveillance scheme and should, ideally, be monitored for virus as well as antibody.

Vaccine design and diagnostic methodologies, and in particular methods of virus detection, are increasingly reliant on up-to-date knowledge of the molecular, antigenic and other biological characteristics of viruses currently circulating and causing disease. Furthermore, epidemiological understanding of the pathways of spread of CSFV can be greatly enhanced by molecular analyses of viruses in endemic areas and those involved in *outbreaks* in disease free areas. It is therefore essential that CSFV isolates are sent regularly to the regional OIE Reference Laboratory for genetic and antigenic characterisation.

3. Serological surveillance

Serological surveillance aims at detecting antibodies against CSFV. Positive CSFV antibody test results can have five possible causes:

- a) natural infection with CSFV;
- b) legal or illegal vaccination against CSF;
- c) maternal antibodies derived from an immune sow (maternal antibodies) are usually found only up to 4.5 months of age, but, in some individuals, maternal antibodies can be detected for considerably longer periods;
- d) cross-reactions with other pestiviruses;
- e) non-specific reactors.

The infection of pigs with other pestiviruses may complicate a surveillance strategy based on serology. Antibodies to bovine viral diarrhoea virus (BVDV) and Border disease virus (BDV) can give positive results in serological tests for CSF, due to common antigens. Such samples will require differential tests to confirm their identity. Although persistently infected immunotolerant pigs are themselves seronegative, they continuously shed virus, so the prevalence of antibodies at the herd level will be high. Chronically infected pigs may have undetectable or fluctuating antibody levels.

It may be possible to use sera collected for other survey purposes for CSF surveillance. However, the principles of survey design described in this Appendix and the requirement for statistical validity should not be compromised.

The discovery of clustering of seropositive reactions should be foreseen. It may reflect any of a series of events, including but not limited to the demographics of the population sampled, vaccinal exposure or the presence of infection by field strains or other pestiviruses. Because clustering may signal field strain infection, the investigation of all instances must be incorporated in the survey design. Clustering of positive animals is always epidemiologically significant and therefore should be investigated.

In countries or *zones* that are moving towards freedom, serosurveillance can provide valuable information on the disease status and efficacy of any control programme. Targeted serosurveillance of young stock will indicate whether newly circulating virus is present, although the presence of maternal antibody will also need to be considered. If conventional attenuated vaccine is currently being used or has been used in the recent past, serology aimed at detecting the presence of field virus will likewise need to be targeted at unvaccinated animals and after the disappearance of maternal antibody. General usage in such situations may also be used to assess levels of vaccine coverage.

Vaccines also exist which, when used in conjunction with dedicated serological tests, may allow discrimination between vaccinal antibody and that induced by field infection. Such tools, described in the *Terrestrial Manual*, will need to be fully validated. They do not confer the same degree of protection as that provided by conventional vaccines, particularly with respect to preventing transplacental infections. Furthermore, serosurveillance using such differentiation requires cautious interpretation on a herd basis.

The results of random or targeted serological surveys are important in providing reliable evidence that no CSFV infection is present in a country or *zone*. It is therefore essential that the survey be thoroughly documented.

Article 3.8.8.4.

Country or zone historically free of CSF in domestic and wild pigs

1. Historically free status

The free status should be reviewed whenever evidence emerges to indicate that changes which may alter the underlying assumption of continuing historical freedom, has occurred. Such changes include but are not limited to:

- a) an emergence or an increase in the prevalence of CSF in countries or *zones* from which live pigs or products are imported;
- b) an increase in the volume of imports or a change in their country or *zone* of origin;
- c) an increase in the prevalence of CSF in the domestic or wild pigs of adjacent countries or *zones*;
- d) an increased entry from, or exposure to, wild pig populations of adjacent countries or *zones*.

2. Free status as a result of an eradication programme

In addition to the general conditions described in Chapter 2.6.7., a Member Country seeking recognition of CSF freedom for the country or a *zone*, whether or not vaccination had been practised, should provide evidence for the existence of an effective surveillance programme. The strategy and design of the surveillance programme will depend on the prevailing epidemiological circumstances and will be planned and implemented according to the general conditions and methods described in this Appendix, to demonstrate the absence of CSFV infection in domestic and wild pig populations. This requires the support of a national or other laboratory able to undertake identification of CSFV infection through virus detection and serological tests described in the *Terrestrial Manual*.

Article 3.8.8.5

Countries, zones or compartments applying for freedom from CSF where vaccination is practised

1. Country or zone free of CSF

In addition to the general conditions described in Chapter 2.6.7., a Member Country seeking recognition of CSF freedom for the country or a *zone*, whether or not vaccination had been practised, should provide evidence for the existence of an effective surveillance programme. The strategy and design of the surveillance programme will depend on the prevailing epidemiological circumstances in and around the country or *zone* and will be planned and implemented according to the general conditions and methods described in this Appendix, to demonstrate the absence of CSFV infection in domestic and wild pig populations and absence or control of CSFV infection in wild pig populations. This requires the support of a national or other laboratory able to undertake identification of CSFV infection through virus detection and serological tests described in the *Terrestrial Manual*.

2. Compartment free of CSF

The objective of surveillance in this instance is to demonstrate that the two subpopulations are effectively separated by measures that ensure the biosecurity of domestic pigs. is to demonstrate the absence of CSFV infection in the *compartment*. The provisions of Chapter 1.3.5. should be followed. The effective separation of the two subpopulations should be demonstrated. To this end, a

biosecurity programme which plan that includes but is not limited to the following provisions should be implemented:

- a) a programme for the management of CSF in wild pigs;
- b) delineation of CSF wild pig control areas around every CSF case reported in wild pigs;
- e) assessment of the presence and mitigative role of natural boundaries;
- d) documentation of the ecology of the wild pig population;
- e) proper containment of domestic pigs;
- a) proper containment of domestic pigs;
- fb) control of movement of vehicles with cleaning and disinfection as appropriate;
- gc) control of personnel entering into the *establishments* and awareness of risk of fomite spread;
- hd) prohibition of introduction to the *establishments* of hunted wild caught animals and their products;
- ic) registry record of animal movements into and out of *establishments*;
- if) information and training programmes for farmers, hunters, processors, veterinarians, etc.

3. The biosecurity programme plan implemented would also require internal and external monitoring by the *Veterinary Authorities*. These elements This monitoring should include but are not limited to:

- a) periodic clinical and serological monitoring of herds in the country or *zone*, and adjacent wild pig populations following these guidelines;
- b) herd registration;
- c) official accreditation of biosecurity programme plan;
- d) periodic monitoring and review.

4. Monitoring the CSF status of wild and domestic pig populations outside the compartment will be of value in assessing the degree of risk they pose to the CSF free domestic population compartment. The design of a monitoring system for wild pig is dependent on several factors such as the size and distribution of the population, the organisation of the *Veterinary Services* and resources available. The occurrence of CSF in wild and domestic pigs may vary considerably among countries. Surveillance design should be epidemiologically based, and the Member Country must should justify its choice of design prevalence and level of confidence based on Appendix 3.8.1.

5. The geographic distribution and approximate size of wild pig populations need to be assessed as a prerequisite for designing a monitoring system. Sources of information may include wildlife conservation organisations, hunter associations and other available sources. The objective of a surveillance programme when the disease is already known to exist should be to determine the geographic distribution and the extent of the infection.

Article 3.8.8.6.

Recovery of free status

EN

EN

1. Countries or zones seeking re-establishment of freedom from CSF following an outbreak

In addition to the general conditions described in Chapter 2.6.7., a country seeking reestablishment of country or *zone* freedom from CSF should show evidence of an active surveillance programme ~~for CSF~~ as well as to demonstrate absence of CSFV infection.

Populations under this surveillance programme should include, but not be limited to:

- a) *establishments* in the area proximity of the *outbreak*;
- b) *establishments* epidemiologically linked to the *outbreak*;
- c) animals used to re-populate affected *establishments* and any *establishments* where contiguous culling is carried out;
- d) wild pig populations in the area of the *outbreak*.

In all circumstances, a Member Country seeking reestablishment of country or *zone* freedom from CSF with vaccination or without vaccination should report the results of an active and passive surveillance programme in which the pig population undergoes regular clinical, pathological, virological, and/or serological examination, planned and implemented according to the general conditions and methods described in these guidelines. The surveillance should be based on a statistically representative sample of the populations at risk.

2. Country or zone free of Surveillance for CSF in wild pigs

While the same principles apply, surveillance in wild pigs presents challenges beyond those encountered in domestic populations in each of the following areas:

- a) determination of the distribution, size and movement patterns associated with the wild pig population;
- b) assessment of the possible presence of CSF within the population;
- c) determination of the practicability of establishing a *zone*.

The design of a monitoring system for wild pigs is dependent on several factors such as the organisation of the *Veterinary Services* and resources available. The geographic distribution and approximate size of wild pig populations need to be assessed as a prerequisite for designing a monitoring system. Sources of information may include wildlife conservation organisations, hunter associations and other available sources. The objective of a surveillance programme is to determine the geographic distribution and estimation of target population.

Estimates of wild pig populations can be made using advanced methods (radio tracking, linear transect method, capture/recapture) or traditional methods based on the number of animals that can be hunted to allow for natural restocking (hunting bags).

For implementation of the monitoring programme, it will be necessary to define the limits of the territory over which wild pigs range in order to delineate the epidemiological units within the monitoring programme. It is often difficult to define *epidemiological units* for wild animals. The most practical approach is based on natural and artificial barriers.

The monitoring programme should also include animals found dead, road kills, animals showing abnormal behaviour or exhibiting gross lesions during dressing.

There may be situations where a more targeted surveillance programme can provide additional assurance. The criteria to define high risk areas for targeted surveillance can be include:

- a) areas with past history of CSF;
- b) sub-regions with high wild pig density;
- c) border regions with CSF affected countries or *zones*;
- d) areas of contact interface between wild and domestic pig sub-populations;
- e) picnic and camping areas;
- f) around farms with free-ranging pigs;
- g) garbage dumps
- h) special other risk areas determined by local the *Veterinary Authorities*;
- g) garbage dumps.

— text deleted

APPENDIX 3.10.2.

GUIDELINES ON THE DETECTION, CONTROL AND PREVENTION OF *SALMONELLA* ENTERITIDIS AND *S. TYPHIMURIUM* IN POULTRY PRODUCING EGGS FOR HUMAN CONSUMPTION

Community comments:

The Community acknowledges the excellent work of the OIE in the field of food safety related to pre-harvest animal production.

Nevertheless, the Community proposes some essential modifications to the proposed text, which is not satisfactory for its practical implementation. (*The version below is the one that was sent to the OIE in May 2007; only "position" was replaced with "comments".*)

Article 3.10.2.1.

Introduction

Community comments:

In the whole chapter, in line with international practice, the words "enteritidis" and "typhimurium" should not be in italic.

The aim of the *Terrestrial Code* is to assist Member Countries in the management and control of significant animal diseases, including diseases with zoonotic potential, and in developing animal health measures applicable to trade in terrestrial animals and their products. This guideline provides recommendations on the detection, control and prevention of *Salmonella Enteritidis* and *S. Typhimurium* in poultry producing eggs for human consumption.

S. Enteritidis and *S. Typhimurium* belong to the species of *S. Enterica*. In most food animal species, *S. Enteritidis* and *S. Typhimurium* can establish a clinically unapparent infection in poultry, of variable duration, which is significant as a potential zoonosis. Such animals may be important in relation to the spread of infection between flocks and as causes of human food poisoning. In the latter case, this can occur when these animals, or their products, enter the food chain thus producing contaminated food products.

Community comments:

Contrary to serotypes (*Enteritidis*, *Typhimurium*), species names should be written in italics: *enterica*.

At the end of the first line, the words "food animal" should be replaced by "poultry" and at the end of the second line, the words "in poultry" should be deleted. The whole chapter is only about poultry.

Salmonellosis is one of the most common food-borne bacterial diseases in the world. It is estimated that over 90% of *Salmonella* infections in humans are food-borne with *S. Enteritidis* and *S. Typhimurium* accounting for major part of the problem. Egg-associated salmonellosis, particularly *S. Enteritidis*, is an important public health problem worldwide.

Article 3.10.2.2.

Purpose and scope

Community comments:

For the sake of clarity and coherence with the following paragraphs, in the last sentence of the first paragraph below, the words "*Salmonella* free eggs" should be replaced by "eggs free of these two *Salmonella* serotypes".

This guideline deals with methods for on farm detection, control and prevention of *S. Enteritidis* and *S. Typhimurium* in poultry producing eggs for human consumption. This guideline complements the Codex Alimentarius draft Code of hygienic practice for eggs and egg products (ALINORM 07/28/13, appendix II). It covers the preharvest part of the production chain from elite flock to the commercial layer farm. The objective is to control *Salmonella* in poultry with the goal of producing *Salmonella* free eggs.

The scope covers chickens and other domesticated birds used for the production of eggs for human consumption. The recommendations presented in this guideline are also relevant to the control of other *Salmonella* serotypes.

Article 3.10.2.3.

Definitions (for this chapter only)

Peak of lay

means the time in the laying cycle (normally expressed as age in weeks) when the production of the flock is highest.

Pullet flock

means a flock of poultry prior to the period of laying eggs for human consumption.

Layer flock

means a flock of poultry during the period of laying eggs for human consumption.

Competitive exclusion

means the administration of bacterial flora to poultry to prevent gut colonisation by enteropathogens, including *Salmonellae*.

Culling

means the depopulation of a flock before the end of its normal production period.

Article 3.10.2.4.

Hazards in poultry breeding flocks, hatcheries and poultry producing eggs for human consumption

All measures to be implemented in breeding flocks and hatcheries are described in Chapter 2.10.2. on *Salmonella Enteritidis* and *Salmonella Typhimurium* in Poultry and in Appendix 3.4.1. on hygiene and disease security procedures in poultry breeding flocks and hatcheries.

This guideline deals with poultry producing eggs for human consumption. The rest of the food chain is addressed by the Codex Alimentarius draft code of hygienic practice for eggs and egg products.

Article 3.10.2.5.

Biosecurity recommendations applicable to pullet and layer flocks

1. Access to the *establishment* should be controlled to ensure only authorized persons and conveyances enter the site. This may require that the *establishment* be surrounded by a security fence. The choice of a suitably isolated geographical location, taking into account the direction of the prevailing winds, facilitates hygiene and disease control. A sign indicating restricted entry should be posted at the entrance.
2. *Establishments* should operate on an 'all in - all out' single age group whenever possible.
3. Where several flocks are maintained on one *establishment*, each flock should be managed as separate entities.

Community comments:

The notion of "separate entities" should be better defined.

4. Poultry houses and buildings used to store feed or eggs should be pest proof and not accessible to wild birds.
5. Poultry houses should be constructed so that cleaning and *disinfection* can be carried out adequately and preferably of smooth impervious materials.
6. *Establishments* should be free from unwanted vegetation and debris. The area immediately surrounding the poultry houses ideally should consist of concrete or other material to facilitate cleaning. An exception to this would be trees for heat control, with the exception of fruit trees which could be attractive to birds.

Community comments:

If trees are accepted for heat control it should be avoided that they are left in front of the ventilation (inlets).

7. Domestic animals, other than poultry, should not be permitted access to poultry houses and buildings used to store feed or eggs.

Community comments:

The point 7 above should be modified, as no other birds than the poultry intended for production should enter the poultry houses. The sentence should begin by "Animals, other than laying hens for production, should not..."

8. Clean coveralls or overalls, hats and footwear should be provided for all personnel and visitors entering the poultry house. A disinfectant foot-bath should be provided, and the disinfectant solution should be changed regularly as recommended by the manufacturer. Personnel and visitors should

wash their hands with soap and water or in a disinfectant solution before and after entering the layer house.

Community comments:

It is important that these hygienic measures are recommended for pullet and layer flocks as well. Best effect is given if the change of clothing and footwear is done at a visible physical hygiene barrier (preferably 40-50 cm high). The footbath might be considered unnecessary if footwear is changed. Another point of concern related to the footbath, is that it might give a false sense of security for the farmer. Therefore, at the beginning of the second sentence the words "A physical hygiene barrier or" should be added before "a disinfectant footbath".

9. When a poultry house is depopulated, all faeces and litter should be removed from the house and disposed of in a manner approved by the *Veterinary Services*. After removal of faeces and litter, cleaning and *disinfection* of the building and equipment should be applied in accordance with Appendix 3.6.1.

Bacteriological monitoring of the efficacy of *disinfection* procedures is recommended when *S. Enteritidis* and/or *S. Typhimurium* have been detected in the flock. Routine pest control procedures should also be carried out at this time.

10. Birds used to stock a pullet house should be obtained from breeding flocks that are certified as free from *S. Enteritidis* and *S. Typhimurium* and have been monitored according to Article 3.4.1.9.
11. Layer flocks should be stocked from pullet flocks that are certified as free from *S. Enteritidis* and *S. Typhimurium* and have been monitored according to this guideline.
12. While *S. Enteritidis* and *S. Typhimurium* are not normally found as a contaminant in feed, it is nonetheless recommended to monitor the salmonella status of feed used in poultry houses. The use of pelletised feeds or feeds subjected to other bactericidal treatment is recommended. Feed should be stored in clean closed containers to prevent access by birds and pests. Spilled feed should be cleaned up regularly to remove attractants for wild birds and pests.

Community comments:

Contrary to the first part of the first sentence, *S. Enteritidis* and *S. Typhimurium* have been found in feed and can be a contaminant. Thus the words "While *S. Enteritidis* and *S. Typhimurium* are not normally found as a contaminant in feed, " should be deleted, as well as the word "nonetheless".

To minimize the attraction of wild birds and rodents the best recommendation is that spilled feed should be cleaned up immediately (instead of regularly).

13. The water supply to poultry houses should be potable according to the World Health Organization or to the relevant national standard, and microbiological quality should be monitored if there is any reason to suspect contamination.
14. Sick or dead birds should be removed from poultry houses as soon as possible and at least daily, and effective and safe disposal procedures implemented.
15. Records of flock history and performance, surveillance, treatment and vaccinations in regard to *Salmonella* should be maintained on an individual flock basis within the establishment. Such records should be readily available for inspection.

16. There should be good communication and interaction between all involved in the food chain so that control can be maintained from breeding to egg production and consumption. Farmers should have access to basic training on hygiene and biosecurity measures relevant to egg production and food safety.

17. For poultry flocks that are allowed to range outdoors, the following provisions apply:

Attractants to wild birds should be minimised (e.g. commercial feed and watering points should be kept inside the poultry house if possible). Poultry should not be allowed access to sources of contamination (e.g. household rubbish, other farm animals, surface water and manure storage areas). The nesting area should be inside the poultry house.

Community comments:

If it is not possible to feed and water the birds indoors a recommendation should be that the feed and water given outdoors should be protected by a shelter or in any another appropriate way against wild birds.

Article 3.10.2.6.

Recommendations applicable to egg hygiene and collection

1. Cages should be maintained in good condition and kept clean. The litter in the poultry house should be kept dry and in good condition. The nest box litter should be kept clean and an adequate quantity maintained.
2. Eggs should be collected at frequent intervals, not less than twice per day, and placed in new or clean and disinfected trays.
3. Dirty, broken, cracked, leaking or dented eggs should be collected separately and should not be used as table eggs.
4. Eggs should be stored in a cool and dry room used only for this purpose. Storage conditions should minimise the potential for microbial contamination and growth. The room should be kept clean and regularly sanitised.
5. Records of egg production should be kept to assist traceability and veterinary investigations.
6. If eggs are cleaned on the farm, this should be done in accordance with the requirements of the Competent Authority.

Community comments:

A new paragraph 7 is suggested. For an opportunity to trace eggs from infected flocks it is essential that the eggs are marked. A recommendation on this is therefore suggested. Work in this regard is currently carried out in the EU and the OIE proposal could be coordinated with that work.

Surveillance of pullet and layer flocks for *S. Enteritidis* and *S. Typhimurium*

Surveillance should be performed to identify infected flocks in order to take measures that will reduce transmission of *S. Enteritidis* and *S. Typhimurium* to humans and to reduce the prevalence in poultry. Microbiological testing is preferred to serological testing because of its higher sensitivity and specificity. In the framework of regulatory programmes for the control of *S. Enteritidis* and *S. Typhimurium*, confirmatory testing may be appropriate to ensure that decisions are soundly based.

Sampling

1. Time and frequency of testing

a) Pullet flock testing

- i) Four weeks before being moved to another house, or before going into production if the animals will remain in the same house for the production period.

Community comments:

Four weeks is too long both for practical and hygienic aspects. A period of two weeks would be more accurate.

- ii) At the end of the first week of life when the status of breeding farm and hatchery is not known or does not comply with Chapter 2.10.2.

Community comments:

Here again, there is no justification to wait one week. On the contrary, waiting could be a risk of letting the infection run. The test should be made on the first day of life, or just at the time of delivery from the hatchery, so that in case of positive findings that would show the infection of the hatchery of origin, the possible freedom of the receiving farm would not be jeopardized, and then after the first week of life.

- iii) One or more times during the growing period if there is a *culling* policy in place. The frequency would be determined on commercial considerations.

b) Layer flock testing

- i) At expected *peak of lay* for each production cycle.

Community comments:

The frequency proposed is not coherent: it should be higher for hens producing for direct consumption than for other cases.

The Community proposes the following point i): "Every 15 weeks during the laying phase." This frequency would also allow taking fewer samples each time (see comment point 3 below).

To detect an infection as early as possible, sampling at the onset of lay could also be recommended as well as before slaughter of the flock at the end of the production period in order

to be able to take the appropriate measures to prevent transmission of *Salmonella* to the consecutive flock.

ii) One or more times if there is a *culling* policy in place or if eggs are diverted to processing for the inactivation of the pathogen. The minimal frequency would be determined by the *Veterinary Services*.

c) Empty building testing

Environmental sampling of the empty building after depopulation, cleaning and *disinfection*, following a *S. Enteritidis* and *S. Typhimurium* positive flock.

2. Available methods for sampling

Drag swabs: Sampling is done by dragging swabs around the poultry building.

Community comments:

This way of swabbing is contested by several experts: it measures infection in the environment, not in the building or in the animals. It can be done but should not be an alternative to other ways. The methods are complementary and the best would be to use at least two testing methods out of the three listed.

Boot swabs: Sampling is done by walking around the poultry building with absorbent material placed over the footwear of the sampler.

Faecal samples: Multiple samples of fresh faeces collected from different areas in the poultry building.

3. Number of samples to be taken according to the chosen method

Community comments:

The procedure and numbers proposed below should be revised at the light of further expertise.

For example, if the frequency of test is higher (cf. point 1 above), 2 pair of boot swabs would be enough; see also comment above regarding drag swabs.

Moreover, since the negative result of bacteriological testing for *Salmonella* depends largely on the sampling procedure, the confirmatory testing should be more extensive than the usual one to ensure the correct result e.g. to give a probability of 95% to detect one positive sample given that infection is present in the population at the level of 1% instead of 5%.

Until then, this point should stay "under study".

Recommendation is 5 pair of boot swabs or 10 drag swabs. These swabs may be pooled into no less than 2 samples. 5 Pair of boot swabs correspond to 300 faeces samples.

The total number of faecal samples to be taken on each occasion is shown in Table I and is based on the random statistical sample required to give a probability of 95% to detect one positive sample given that infection is present in the population at a level of 5% or greater.

Table I

Number of birds in the flock	Number of samples to be taken on each occasion
25-29	20
30-39	25
40-49	30
50-59	35
60-89	40
90-199	50
200-499	55
500 or more	60

4. Laboratory methods

Refer to the *Terrestrial Manual*.

Article 3.10.2.8.

Control measures

Salmonella control can be achieved by adopting the management practices mentioned above in combination with the following measures. No single measure used alone will achieve effective *S. Enteritidis* and *S. Typhimurium* control.

Currently available control measures are: vaccination, *competitive exclusion*, flock *culling* and product diversion to processing. Antimicrobials, *competitive exclusion* and live vaccination are used in elite flocks.

Community comments:

The meaning of the second sentence is unclear. If it brings a differentiation, it is useless and should be deleted.

Antimicrobials are not recommended to control *S. Enteritidis* and *S. Typhimurium* in poultry producing eggs for human consumption because the effectiveness of the therapy is limited; it has the potential to produce residues in the eggs and can contribute to the development of antimicrobial resistance.

Community comments:

The wording is not clear enough, as antimicrobials should not be used to control Salmonella. The sentence should begin by "Antimicrobials should not be used to control... etc."

1. Vaccination

Many inactivated vaccines are used against *Salmonella* infections caused by different serovars in various poultry species, including a single or combined vaccine against *S. Enteritidis* and *S. Typhimurium*.

Live vaccines are also used in a number of countries to prevent *Salmonella* infections in poultry. It is important that field and vaccine strains can easily be differentiated in the laboratory. Vaccines produced according to the *Terrestrial Manual* should be used.

Vaccination can be used as part of an overall *Salmonella* control programme. Vaccination should never be used as the sole control measure.

When the status of breeding farm and hatchery from which the *pullet flock* originates is not known or does not comply with Chapter 2.10.2., vaccination of *pullet flocks*, starting with day-old chicks, against *S. Enteritidis* or *S. Enteritidis/S. Typhimurium* should be considered.

Community comments:

The term "should" is too imposing.

It is suggested that the wording of the end is changed to “vaccination of pullet flocks...might be considered” (instead of "should be considered").

Vaccination should be considered when moving day-old chicks to a previously contaminated shed so as to minimize the risk of the birds contracting infection with *S. Enteritidis* and *S. Typhimurium*.

Community comments:

Idem.

“Vaccination might be considered when moving...” (instead of "should be considered").

When used, vaccination should be performed according to the instructions provided by the manufacturer and in accordance with the directions of the *Veterinary Services*.

2. Competitive exclusion

Competitive exclusion can be used in day old chicks to reduce colonisation by *S. Enteritidis* and *S. Typhimurium*.

3. Culling

Depending on animal health and public health policies, culling is an option to manage infected flocks. If poultry are not culled, eggs should be sent for processing for inactivation of pathogens. Infected flocks should be destroyed or slaughtered and processed in a manner that minimises human exposure to pathogens.

Before restocking, the poultry house should be cleaned, disinfected and tested to verify that the cleaning has been effective (see above).

Farmers should be educated on how to handle *Salmonella* infected flocks in order to prevent spread to adjacent farms and human exposure.

Article 3.10.2.9.

Prevention of Salmonella spread

When a *layer flock* or *pullet flock* is found infected with *S. Enteritidis* and *S. Typhimurium*, management procedures should be implemented.

In addition to the general control measures described previously, management procedures should be adjusted to effectively isolate the infected flock from other flocks on the farm, adjacent farms and from other farms under common management.

1. Personnel should observe standard disease control procedures (e.g. handle infected flock separately/last in sequence and use of dedicated personnel and clothing and, if possible equipment).
2. Pest control measures should be observed stringently
3. Epidemiological investigations should be carried out to determine the origin of new infections as appropriate to the epidemiological situation.
4. Movement of *culled* poultry or layers at the end of the production cycle should only be allowed for slaughter or destruction.

Community comments:

This point needs to be clarified, as culled poultry cannot be sent for slaughter.

It could be divided in two:

Movement of *culled* poultry should only be allowed for destruction. Movement of layers at the end of the production cycle should only be allowed for slaughter, or culling followed by destruction.

5. Poultry litter/faeces and other potentially contaminated farm waste should be disposed of in a safe manner to prevent the spread of infections with *S. Enteritidis* and *S. Typhimurium*. Particular care needs to be taken in regard to poultry litter/faeces used to fertilise plants intended for human consumption.
6. After depopulation of an infected flock the poultry house should be thoroughly cleaned and disinfected, with special attention to feed equipment and water systems.
7. Before restocking bacteriological examination should be carried out, if possible, to verify that the cleaning has been effective.

TEXTS FOR COMMENT OF MEMBER COUNTRIES

The numbering used is that of the Code Commission Report of its March 2007 meeting.

2. b) Guidelines on compartmentalisation

Community comments:

The Community supports the work on these General Guidelines. Some amendments should be done to bring more clarity and applicability.

The work on compartmentalisation should continue within ad hoc groups in order to address specific situations/species/diseases where the principle can or cannot be used.

The Terrestrial Code Commission has received from the Scientific Commission draft general guidelines for the application of compartmentalisation. The draft Appendix, which is presented at [Appendix XXXIII](#) in Part B of this report, is circulated to Member Countries for comment.

14. b) Guidelines on animal identification and traceability

Community comments:

The Community welcomes this work and draft guidelines.

Nevertheless, some amendments should be made to the text.

The Terrestrial Code Commission reviewed the report of the OIE *ad hoc* Group on Identification and Traceability of Live Animals that met in January 2007 and noted the comments of the APFSWG. The report is appended for Member Countries' information at [Appendix L](#) in Part C of this report.

The Terrestrial Code Commission welcomed the suggestion of the *ad hoc* Group on OIE organising an international conference on animal identification and traceability since this would assist in identifying the different approaches taken in different OIE Regions.

The Terrestrial Code Commission noted several proposals of the *ad hoc* Group on new and amended definitions. In reply to the *ad hoc* Group request on the need for a definition of "movement", the Terrestrial Code Commission advised that there is no urgent need for it.

Following the recommendations of the APFSWG, the Terrestrial Code Commission amended the Draft Guidelines on the Design and Implementation of Animal Traceability and submits it for Member Countries comments at [Appendix XXXIV](#) in Part B of this report.

17. c) Development of new standards for animal welfare

Community comments:

The Community welcomes this initiative and considers this first step very positively. The Community will encourage the development of further information in this domain in particular as regards control measures listed in Article 5 of the draft guideline.

Methodological approach regarding the carrying capacity and the estimation of stray dog populations could be further expanded as well as methods of capture, transport, keeping and killing of dogs. Scientific information regarding the behaviour of stray dogs and their possible practical applications to control their population would be valuable to be added.

- **Dog Population Control**

The Terrestrial Code Commission noted the report of the OIE *ad hoc* Group on Dog Population Control which is presented at [Appendix LII](#) in Part C of this report for Member Countries' information. The Terrestrial Code Commission considered that further work should be done and referred the report to the PAWWG with a request that the Working Group work to finalise the Guidelines as a matter of top priority. The Terrestrial Code Commission also received a copy of the Executive Summary of Member Country replies to the OIE Questionnaire on Dog Population Control. The Terrestrial Code Commission thanks the Member Countries who answered this questionnaire.

The Executive Summary of Member Country replies to the OIE Questionnaire is attached to this Report ([Appendix LIII in Part C of this report](#)) for Member Countries' information, while the draft Guidelines on stray dog population control are attached ([Appendix XXXV in Part B of this report](#)) for Member Countries' comments.

18. African horse sickness

Community comments:

This draft should be slightly amended.

The absence of possible compartmentalisation in this Chapter is to be related with the Community comments on the General Guidelines on Compartmentalisation.

The Terrestrial Code Commission received from the Scientific Commission a new Chapter 2.5.14. on African horse sickness and draft guidelines on surveillance for African horse sickness, which are presented at [Appendices XXXVI and XXXVII to this report](#), and are circulated for Member Countries' comments.

The Terrestrial Code Commission decided to defer further consideration of the compartmentalisation approach for African horse sickness until it has received scientific advice on the use of this concept in regard to bluetongue.

19. African swine fever

Community comments:

This Chapter should be revised in depth, in particular:

- The introduction states that distinction is made between domestic and wild pigs, but there is no such a distinction in the status;

- There are reference in the articles 6 and 9 to countries or zones "with ASF infection in domestic pigs" or "considered infected with ASF in domestic pigs" without any definition of such a status, nor of a status where there would not be infection in domestic pigs but there would be in wild pigs.

Chapter 2.6.6. of the *Terrestrial Code* on African horse sickness was reviewed by the OIE *ad hoc* Group on classical swine fever and African swine fever at its November 2006 meeting. As the existing Chapter was regarded as outdated, it was decided to draft a new Chapter using the approach used for the Chapter on classical swine fever as a template. This draft was endorsed by the Scientific Commission at its January 2007 meeting.

The draft Chapter, which is presented as clean text at [Appendix XXXVIII to this report](#), is circulated to Member Countries for comment.

20. Newcastle disease

Community comments:

The Community thanks the OIE Terrestrial Code Commission for this work, as the Chapter on Newcastle Disease needed to be updated and Guidelines for surveillance needed to be drafted.

The present draft should be amended though, so that it is clearer and more applicable. In particular, the article 2.7.13.1 may be confusing and should be re-written. The Community proposes changes, inserted in boxes below the concerned articles.

An *ad hoc* Group used the *Terrestrial Code* Chapters on avian influenza and on zoning and compartmentalisation as well as the Appendix on avian influenza surveillance as a basis for drafting a Chapter on Newcastle disease and an Appendix on the surveillance of the disease. The OIE *ad hoc* Group's report explains the reasoning behind specific Articles in the new text. The new Chapter and Appendix on Newcastle disease, which have been endorsed by the Scientific Commission, are submitted for Member Countries' comments ([Appendices XXXIX and XL to this report](#)).

21. West Nile fever

Community comments:

This Chapter is not satisfactory and should be revised in depth.

The comments inserted are a minimum, but even more work can be done.

The Terrestrial Code Commission received a Chapter on West Nile fever drafted by an *ad hoc* Group. This draft chapter, which has been endorsed by the Scientific Commission, is submitted for Member Countries' comments ([Appendix XLI to this report](#)).

22. OIE model certificates

Community comments:

The Community supports the modifications, but would like to introduce new changes, mainly in consequence of the last changes in the Definitions Chapter.

The Terrestrial Code Commission reviewed the report of the *ad hoc* Group on the Revision of the OIE Model Certificates that met in January 2007 and noted the comments of the APFSWG. The report is appended for Member Countries' information at [Appendix LVI](#) in Part C of this report.

The Terrestrial Code Commission supported the views of the *ad hoc* Group on the scope of the veterinary certificates when covering products of animal origin that undergo further processing.

The Terrestrial Code Commission revised the proposed model certificates, the related notes for guidance and the proposed amendments to the General Obligations (Chapter 1.2.1. of the *Terrestrial Code*) and submitted them for Member Countries' comments (see [Appendices XLII to XLVII](#)).

23. Animal feeding

Community comments:

The Community welcomes the OIE work in this field.

This first part of guidelines needs to be further developed.

It wishes to participate to this work and keeps its experts at the disposition of the OIE.

The Terrestrial Code Commission reviewed the report of the *ad hoc* Group on Animal Feeding that met in October 2006 and complimented the *ad hoc* Group on this work. The report is appended for Member Countries' information at Appendix LVII in Part C of this report.

The Terrestrial Code Commission noted the APFSWG comments and supported them.

The text amended by the APFSWG is presented at Appendix XLVIII to this report for Member Countries' comments.

APPENDIX 3.x.x.

**GENERAL GUIDELINES FOR THE APPLICATION OF
COMPARTMENTALISATION****Community comments:**

The Community supports the work on these General Guidelines. Some amendments should be done to bring more clarity.

The words "*Veterinary Administration*" should be replaced by the words "*Veterinary Authority*" throughout the text.

The work on compartmentalisation should continue within ad hoc groups in order to address specific situations/species/diseases where the principle can or cannot be used.

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 of management practices and biosecurity. However, spatial considerations and good management practices play a role in the application of both concepts.

Community comments:

The word "measures" should be added after the word "biosecurity".

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.

Community comments:

A definition of "herd" (and "flock" other than of birds) is needed.

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.

Community comments:

The word "endemic" should be defined (or replaced by "infected").

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.

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

Community comments:

Other environmental factor should be taken into consideration, such as wildlife and migratory routes etc.

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 *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.

Community comments:

In order to get compartmentalisation accepted internationally it is important that countries apply more or less the same procedure and a procedure that they are familiar with, HACCP being the most. Thus the following sentence should be added after the first sentence of the above paragraph: "This evidence shall be structured in line with the international recognised guidance provided for the application of the Hazard Analysis And Critical Control Point (HACCP) system, as laid down by CODEX alimentarius CAC/RCP 1-1969. (currently Rev. 4-2003 –annex.)".

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.

Community comments:

At the end of the second sentence, the words "and movements" should be added after the word "history", and the words "and documented" after the word "audited".

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

Community comments:

The *Veterinary Authority* shall recognise and audit the compartment but cannot expressly certify all movements of animals. Recognition by the veterinary authorities implies that the compartment has a functioning system of traceability. The role of the *Veterinary Authority* is not to certify every movement, except if a risk assessment implies a temporary stricter control.

The sentence above should be replaced by the following: "All animal movements into and out of the compartment should be registered, recorded at the compartment level and, when needed based on a risk assessment, certified by the *Veterinary Services*."

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 *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*.

Community comments:

There can be a problem of confidentiality, which must be assessed here. A possibility would be to add the word "relevant" before the word "information".

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.

Community comments:

In the first sentence, the word "such" should be replaced by "so".

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.

Community comments:

The last sentence above could possibly lead to financial and legal complications, especially the first part of it:

Who is responsible for this surveillance, the Veterinary services or the Compartment? How will the owners of these units react if they are not part of the project? What does "close proximity" then means? This should be addressed in more details.

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 *Manual*, should be available for sample testing. All laboratory tests and procedures should comply with the recommendations of the *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 OIE *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

Community comments:

The Community welcomes this work and draft guidelines. Some amendments should be made.

The words "*Veterinary Administration*" should be replaced by the words "*Veterinary Authority*" throughout the text.

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.

Community comments:

This definition is not clear as the first desired outcome of a programme is the *traceability*. And then the desired outcomes of traceability are to "demonstrate (and not "ensure") safety or suitability and to be able to manage any problem throughout the production".

The words "and zootechnical aspects" should be added at the end of the definition.

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:

Community comments:

In order of better clarity, the words "breeders" should be inserted between "animal producers" and "and food processors".

- 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).

Community comments:

A point e) should be added:

- e) zootechnical aspects (e.g. animal performance, genetic data)**

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

Community comments:

A point should be added for "Existing identification system(s)".

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.

Community comments:

The words "and to ensure plausibility of data" should be included after the word "numbers".

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.

Community comments:

In the list of elements to be taken into account, should be added "compatibility with other purposes", because the identification systems should ensure multipurpose uses.

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*.

Community comments:

For the text to be coherent and applicable, it should be changed in the following:

The *Veterinary Authority* is responsible for approving the identifiers and the equipment to apply them, to ensure that animal identification complies with technical and field performance specifications, and for the supervision of the distribution of identifiers. The *Veterinary Authority* is also responsible for ensuring that individual 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*.

Community comments:

For coherence with the rest, the word "Animals" should be replaced by the words "When animals are".

- iii) When an animal loses its identification or the identifier becomes unusable.
- iv) Arrangements for the destruction and/or reuse of identifiers.

Community comments:

The word "arrangements" is unclear and should be replaced by "rules".

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.

Community comments:

The word "unique" should be deleted as a group identifier cannot be unique. It could at the most be "uniform" in the whole text.

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

Community comments:

The owner is not always the person responsible for the animals. The word "keepers" should replace the word "owners" everywhere in the text, as well as "keepership" should replace "ownership" in point iv) under.

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*.

Community comments:

A definition of "transit establishment" should be drafted.

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.

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.

Community comments:

The word "arrangements" is unclear and should be replaced by "rules" in the whole text.

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.

Community comments:

A first indent should be added, to include in the "Design and main elements of the system".
--

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.

d) Review

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

Draft guidelines on dog population control

Community comments:

The Community welcomes this initiative and considers this first step very positively, even if the wording of the text needs improvement. The Community will encourage the development of further information in this domain in particular as regards control measures listed in Article 5 of the draft guideline. The whole guidelines should be done in order that Member Countries can practically use them, and keep to rational approach.

Methodological approach regarding the carrying capacity and the estimation of stray dog populations could be further expanded as well as methods of capture, transport, keeping and killing of dogs. Scientific information regarding the behaviour of stray dogs and their possible practical applications to control their population would be valuable to be added.

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.

Community comment:

The reference to developing countries could be deleted since these guidelines could be very useful also for developed countries. Indeed in developed countries often there is no national legislation or guidelines on the control of the stray dog population and the phenomenon is essentially managed by the local authorities

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.

Community comments:

The categories of stray dogs laid down here do not appear easily verifiable and a possible alternative could be for example:

(1) dogs with physical evidence of identification or ownership (such as a tattoo, a collar, etc.)

(2) dogs without physical evidence of ownership but showing dependant and positive behaviour to humans beings,

(3) dogs without physical evidence of ownership and showing independant or aggressive behaviour to human beings.

Other examples of categorisation of stray dogs could be envisaged as to help authorities or other groups involved in managing the captured animals.

- b) **Owned Dog:** 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

Community comment:

Since these guidelines refer to the control of dog population, the word "pet" should be replaced by the word "dog" in order to ensure consistency with the heading of the Appendix.

- 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*.
- 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.

Community comments:

The notion of "carrying capacity" is very valuable but would need to be further developed as to be used more practically. References or examples of models to calculate or estimate the carrying capacity should be presented.

Methods to estimate the stray dog population may also be of interest to be presented (if any) as to be used by the authorities to evaluate the impact of their policy.

Article 2

Dog population control program optional objectives

1. The objectives of a program to control dog population may include the following:
2. Improve health and welfare of owned and stray dog population
3. Reduce numbers of stray dogs
4. Create a rabies immune dog population
5. Promote responsible ownership
6. Reduce the risk of zoonotic diseases other than rabies
7. Manage other risks to human health
8. Prevent harm to the environment

Community comments:

The numbering should be revised: the first sentence should not be numbered.

Another objective should be added: "Prevent illegal trade and traffics".

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.

Community comments:

Veterinary Administration is already defined in Chapter 1.1.1, therefore the sentence "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 diseases and avian influenza" could be deleted.
Since these are guidelines, the sentence "In many countries the Veterinary Administration is in the Ministry of Agriculture" could be deleted as well.

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.

Community comment

The advisory group cited above should include in particular the organisations listed in Article 3.

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

Community comments:

A good methodology is the generalised dog identification and centralised registration. Even if an unidentified dog population remains, it is possible to estimate its evolution with the data relative to the registered animals and field surveys.

c) Legislation

Legislation that would help authorities to establishing successful dog control programmes should includes 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.

Community comments:

A good methodology is the generalised dog identification and centralised registration. A centralised database is useful. The identifying systems should also be controlled and harmonised.

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
- i) 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.

Community comments:

More guidance would be needed here concerning acceptable methods of capture, transport and keeping dogs taking into account their basic behaviours and needs.

Emphasis should be given on the need for animals' handlers to be aware of the different aspects of these tasks (e.g. human safety and animal welfare).

e) Management of dogs removed from communities

Community comment:

The wording "dogs removed from communities" would need further explanation if different from the management of captured stray dogs.

- 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.

Community comment:

More guidance would be needed concerning the requirements for the housing of dogs.

- 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 i.e. 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.

Community comment:

Public policy toward better services for the collection of rubbish associated with stricter rules concerning the release of wastes in the environment should be emphasized here. Synergy of such policy with the fight against rodents and insects could be stressed also here.

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:

- 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.

Community comment:

The Community suggests that the aspects presented under this section should be further expanded as to provide guidance to the authorities in developing legislation applicable to commercial animal dealers.

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.

Community comment:

In the second sentence, the word "are" should be replaced by "may be", and the words "therefore, they are not recommended" should be deleted: there is no rationale behind that. The guidelines should propose ways instead of "banning" others.

At the end of the paragraph, the words "The competent authority takes measures on the basis on behavioural evaluation by a vet" should be added.

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.

	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 ₂	Yes	No	As CO ₂ is heavier than air, the dogs can lift their heads over the CO ₂ layer and death is slow.
	Barbiturates	Yes	Yes	Requires an appropriate dose and pre-anaesthetic.
	Intravenous	Yes	Yes	Administered under veterinary supervision and requires trained personnel.
	Intracardial	Yes	Yes	Slow death.
II	Intraperitoneal	Yes	Yes	
	T 61 = Tanax	Yes	Yes	Dangerous for personnel in the event of accidental injection.
	Intravenous	Yes	Yes	Slow death.
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)
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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

Community comment:

The wording "Research needs" would need further explanation, since this type of article are normally not foreseen in the OIE guidelines format.

Article 8

International cooperation

To be completed

CHAPTER 2.5.14.

AFRICAN HORSE SICKNESS**Community comments:**

This draft should be slightly amended.

There is no definition of the disease (see comments on the Guidelines for AHS surveillance).

The absence of possible compartmentalisation in this Chapter is to be related with the Community comments on the General Guidelines on Compartmentalisation.

The words *Veterinary Administration* and *Veterinary Administrations* should be replaced respectively by *Veterinary Authority* and *Veterinary Authorities*.

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:

Community comments:

As there is no reference of "*pathological material* and biological products" in the articles dealing with importation, these words should be deleted.

- 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*.

Community comments:

In point d) above, a minimum period of time should be added after the word "AHS", for example:

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

Rationale:

- "Free country" means there is no virus; with a 40 days disease freedom there is little chance of having animals not yet cleared from the virus, if introduced viremic.

- 2 years no vector means 2 vector seasons so even residual infection in the vector population can be ruled out (see requirement in (b)).

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.
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

Community comments:

The notion of "historical data" are unclear and should be assessed in surveillance guidelines.

- 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.

Community comments:

The articles 2.5.14.6 and 2.5.14.7 do not really differ, whereas the risk is substantially different. Thus whether the quarantine should not be required in article 6 (replaced by isolation), or it should be substantially shorter than in article 7.

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

Community comments:

The quarantine period should be precisely defined: 40 days.

3. were held continuously during the quarantine period of 40 days 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
- 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.

When importing *Veterinary Administrations* 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.

When importing *Veterinary Administrations* 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;

Community comments:

The word "semen" should be replaced by "embryos/oocytes".

- 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 semen; 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 semen 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

Community comments:

These Guidelines are welcomed by the Community, but their Introduction should be revised, and some amendments should be made.

The words *Veterinary Administration* and *Veterinary Administrations* should be replaced respectively by *Veterinary Authority* and *Veterinary Authorities*.

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.

Community comments:

This first paragraph seems to indicate that Member Countries of the OIE can seek recognition for AHSV free status, which is not the case at present.

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.

Community comments:

In the second line, the word "is" should be replaced by the words "has been".

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*.

Community comments:

These Guidelines cannot add any conditions to that included in the Chapter. The first sentence should read: "According to the conditions described in Chapter 2.5.14 Article 2 point c)... etc". Indeed, the whole Guidelines are about active surveillance, which is not required for example from historically free countries.

Susceptible wild equid populations should be included in surveillance when these animals are intended for trade.

Community comments:

There is no justification to the limitation of the surveillance only to traded wild equidae. These animals might represent a reservoir and should be included in the surveillance, whatever their use. Thus the words "when these animals are intended for trade" should be deleted.

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.

Community comments:

The words "or seasonally free" should be added after the word free, to be consistent with the Chapter.

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
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*.

Community comments:

For other diseases, the case definition and 3 paragraphs above are not part of the Guidelines on surveillance but of the Chapter. The coherence should be kept throughout the Code.

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).

Community comments:

The word "unvaccinated" should be added between the words "(e.g." and "horses)".

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.

Community comments:

The fourth sentence of the paragraph above anticipates the fact that the OIE will eventually assess Member Countries' status for AHS. For the time being, the following wording would be more appropriate: "An exporting country should... etc."

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.

Community comments:

The word "useful" is not strong enough, and should be replaced by the word "important", or even "essential".

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 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.

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

CHAPTER 2.6.6.

AFRICAN SWINE
FEVER**Community comments:****This Chapter should be revised:**

- The introduction states that distinction is made between domestic and wild pigs, but there is no such a distinction in the status;

- There are reference in the articles 6 and 9 to countries or zones "with ASF infection in domestic pigs" or "considered infected with ASF in domestic pigs" without any definition neither of such a status, nor of a status where there would not be infection in domestic pigs but there would be in wild pigs.

The words *Veterinary Administration* and *Veterinary Administrations* should be replaced respectively by *Veterinary Authority* and *Veterinary Authorities*.

More stringent conditions should be asked for wild pigs imported if the country or zone of origin is adjacent to an infected country or zone.

The amendments proposed below are a minimum requisite for the text to be acceptable.

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 (*Hydrochoerus 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 *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:

- 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

Community comments:

There should be a definition of an infected country or zone, and of a country or zone without infection in the domestic pigs but with infection in the wild pigs.

Or if not possible because of the epidemiology of this vector borne disease, the articles 6 9 and 11 should be amended as proposed below.

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 2.6.6.3 b) 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

Community comments:

The word "with ASF infection in domestic pigs" should be replaced by the words "not free from ASF",

OR

The status of a country or zone "with ASF infection in domestic pigs" should be defined, which would imply dealing with countries or zones without infection in domestic pigs but with infection in wild pigs, which could be difficult taking into account the epidemiology of this vector borne disease.

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;

Community comments:

The risk represented by wild pigs, reservoir for this disease vector-transmitted, is important and if the animals come from a zone adjacent to an infected zone, there should be an additional condition.

A point 3 should be added:

3. if the zone where the animal has been captured is adjacent to a zone with infection in wild pigs, were kept in a *quarantine station* for 40 days prior to shipment, and were subjected to a virological test and a serological test performed at least 21 days after entry into the *quarantine station*, with negative results

Article 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 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:

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 2.6.6.8

Community comments:

The word "with ASF infection in domestic pigs" should be replaced by the words "not free from ASF".

OR

The status of a country or zone "considered infected with ASF in domestic pigs" should be defined, see comments above.

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 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.

Community comments:

The word "with ASF infection in domestic pigs" should be replaced by the words "not free from ASF".

OR

The status of a country or zone "considered infected with ASF in domestic pigs" should be defined, see comments above.

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:
 - 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**Community comments:**

The Community thanks the OIE Terrestrial Code Commission for this work, as the Chapter on Newcastle Disease needed to be updated.

The present draft should be amended though, so that it is clearer and more applicable. In particular, the article 2.7.13.1 may be confusing and should be re-written. The Community proposes the following changes, inserted in the boxes below the concerned articles.

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).

Community comments:

This new terminology may cause confusion. Low virulent APMV-1 does not cause ND and should not be called NDV. There are no specific requirements linked to those terms, so the whole paragraph should be deleted. Accordingly, all references to vNDV in the text of this chapter should be replaced by NDV.

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*

Community comments:

The article should be re-written in order to make it clearer and more applicable. There are some contradictory or useless cross references, and some words are not clear, in particular: point 1 should define Newcastle Disease (ND) and not ND *outbreak*; the reference to the Manual should only concern the virus, not the definition as there would be a contradiction; the definition of an ND *outbreak* should then follow; then the animals that are concerned by the present Chapter; the definition of poultry should be clarified and be harmonised with that of AI Chapter, as well as point 4.

The Community proposes the following wording (changes are highlighted in yellow):

Article 2.7.13.1

1. **Newcastle Disease (ND) is defined as an infection of poultry caused by a virus of avian paramyxovirus serotype 1 that meets one of the following criteria for *virulence*:**

- a) The virus has an intracerebral pathogenicity index (ICPI) in day-old chicks (*Gallus gallus*) of 0.7 or greater; or
- b) Multiple basic amino acids have been demonstrated in the virus (either directly or by deduction) at the C-terminus of the F2 protein and phenylalanine at residue 117, which is the N-terminus of the F1 protein. The term ‘multiple basic amino acids’ refers to at least three arginine or lysine residues between residues 113 and 116.

Failure to demonstrate the characteristic pattern of amino acid residues as described above would require characterisation of the isolated virus by an ICPI test. In this definition, amino acid residues are numbered from the N-terminus of the amino acid sequence deduced from the nucleotide sequence of the F0 gene, 113–116 corresponds to residues –4 to –1 from the cleavage site.

2. **An *outbreak* of ND occurs when NDV has been isolated in poultry and identified as such or viral RNA specific for NDV has been detected.**

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

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

4. A country should not impose immediate trade bans in response to a notification of infection with NDV in birds other than poultry according to point 3 above.

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

6. Standards for diagnostic tests, including pathogenicity testing, are described in the *Terrestrial Manual*. When the use of ND vaccines is appropriate those vaccines should comply with the standards described in the *Terrestrial Manual*.

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.

Community comments:

For consistency with the comments in article 1, "vNDV" should be replaced by "NDV".

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.

Community comments:

For consistency with the comments in article 1, "vNDV" should be replaced by "NDV".

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;

Community comments:

For consistency with the comments in article 1, "vNDV" should be replaced by "NDV".

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.

Community comments:

In point (2) the sentence is not clear: ND is now defined in article 1, so the words "of infection with a virus which would be considered ND in poultry" should be replaced by the words: "of ND".

The order of the paragraph 4 on transport and paragraph 5 on vaccination should be inversed following the same order of paragraphs 3 and 4 in Article 2.7.13.4.

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;

Community comments:

For consistency with the comments in article 1, "vNDV" should be replaced by "NDV".

4. the birds are transported in new or appropriately sanitized containers;
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 2.7.13.2, *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;

Community comments:

For consistency with the comments in article 1, "vNDV" should be replaced by "NDV".

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;

Article 2.7.13.11.

When importing from an ND free country, zone or compartment as defined in Article 2.7.13.2, *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.

Community comments:

For consistency with the comments in article 1, "vNDV" should be replaced by "NDV".

3. the egg products are transported in new or appropriately sanitized containers.

Community comments:

In point 1 above, the words "(under study)" should be added, as there is no validated method yet in the Code.

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

Community comments:

For consistency with the comments in article 1, "vNDV" should be replaced by "NDV".

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.

Community comments:

For consistency with the comments in article 1, "vNDV" should be replaced by "NDV".

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.

Community comments:

For consistency with the comments in article 1, "vNDV" should be replaced by "NDV".

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.

Community comments:

For consistency with the comments in article 1, "vNDV" should be replaced by "NDV".

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.

Community comments:

For consistency with the comments in article 1, "vNDV" should be replaced by "NDV".



APPENDIX 3.8.X.

GUIDELINES ON SURVEILLANCE FOR NEWCASTLE DISEASE

Community comments:

The Community welcomes these new Guidelines.

Some proposals for amendments are inserted below. In any case, the terms used in the Guidelines should be consistent with those used in the Chapter. If the new definition of ND is retained, then the word vNDV should be systematically replaced by NDV.

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.

Community comments:

See comments about ND definition in article 1 of the Chapter, and especially about NDV. This paragraph should be modified in line with the Chapter.

In order to be clearer, the words "as defined in Chapter 2.7.13" should be added at the end of the paragraph above after the word "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.
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.).

Community comments:

The third sentence of the paragraph above anticipates the fact that the OIE will eventually assess Member Countries' status for ND. For the time being, maybe the following wording would be more appropriate: "Free status from NDV infection should be established through providing details 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.

Community comments

For ND indeed, very efficient vaccines exist, which are widely used. In case of "blanket vaccination", some active surveillance methodologies, like serologies, would be useless, and some others, like the use of sentinel poultry, a complicated and costly method, would possibly present more risks than advantages. This should be better assessed in article 4 paragraph 2.

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:

- 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.

Community comments

For ND indeed, very efficient vaccines exist, which are widely used. In case of "blanket vaccination", they are used not only to control but also to eradicate and prevent the reintroduction of the virus. Some active surveillance methodologies, like serologies, would be useless, and some others, like the use of sentinel poultry, a complicated and costly method, would possibly present more risks than advantages. This should be better assessed, and include the percentage of animals vaccinated as a tool for disease status evaluation.

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.

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.

CHAPTER 2.2.XX.

WEST NILE FEVER

Community comments:

This Chapter should be revised in depth. The uncertainty of the scientific data regarding WNF should invite the OIE to the utmost prudence in drafting this chapter. The Community proposes to the OIE to convene another ad hoc group to which an EU expert could participate. The comments below and in the text are indicative and not exhaustive.

- The first article, which is not well structured and sometimes unclear, defines the equidae as dead end hosts, nevertheless the articles 5 to 7 prescribe very stringent conditions clearly applicable to equidae; it is not justified. The Chapter would better be only applied to susceptible poultry. Even then, until now no expert can confirm that only the trade of geese present a risk, the particular susceptibility of ducks is not known.

- The conditions laid down in articles 5 to 7 are very unclear: they relate to all susceptible species, i.e. equidae, geese and ducks, chicks less than 12 days old and birds other than poultry (which are not defined), but it is impossible to apply the same conditions to those so different species; clearly the articles mainly relate to equidae, which are not concerned by the diffusion of the disease; and the conditions laid down in article 7 related to infected countries or zones are less stringent than those of the precedent articles!

- The conditions laid down in article 8 for wild birds, which are the main risk of diffusion of the disease, are far from sufficient.

- The principle of compartmentalisation is introduced, though the Chapter is mainly addressing equidae, for which in other Chapters (AHS in particular) are not taking this principle into account; there is a contradiction to be resolved.

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.

Community comments:

The introduction of a reference to humans in this chapter could be considered as irrelevant.

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:

Community comments:

A case is an animal infected. The sentence above should read: "The following defines occurrence of WNF".

The OIE should not include findings in humans unless those findings are of epidemiological relevance, as humans are extremely mobile and their health status may be of no relevance (if for example in urban areas with no access to poultry), if not out of the scope of the OIE Code.

In addition, there is a high seroconversion rate without any clinical evidence of disease in certain areas, that means there is the possibility of virus isolation from individuals, but there is no reason to call such event an outbreak

Thus the following text would be better, making always the link to clinical signs or previous epidemiology:

- 1. WNV has been isolated and identified as such 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**
- 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.**

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.

Community comments:

The definition of the incubation period should be more precise and use refer to the maximum length: 15 days, or be defined for each susceptible species.

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

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

Community comments:

The words "a case" should be replaced by "an outbreak".

See also the above comments on the involvement of humans that may not be an outbreak as not linked to a holding.

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

Community comments:

The words "clinical" and "case" should be deleted and the word "outbreaks" should be added after the word "WNF".

- 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

Community comments:

Points a) and b) above have not at all the same scope and cannot be put as alternatives.

- 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;

Community comments:

But those animals should be seropositive for a minimum period of time before shipment, otherwise they could just have seroconverted (or discrimination between IgM and IgG).

- 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

Community comments:

The words "that the animals are" should be deleted.

- 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.

Community comments:

The following words should be added: "provided these imports are carried out in accordance with this chapter."

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.

Community comments:

The following words should be added: "provided these imports are carried out in accordance with this chapter."

Article 2.2.XX.5.

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

Community comments:

The notion of compartment is difficult to define for equidae and a vector transmitted disease.

for susceptible species

Community comments:

The same conditions cannot apply to animals so different as horses, geese and chicks less than 12 days old.

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

Community comments:

A serology could be realised as in article 7, in which the agent identification would be much more justified.

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.

Community comments:

The paragraph 3 should be paragraph 4, introduced by "or", and the paragraph 4, with its point c) deleted, should be paragraph 3, introduced by "AND".

Moreover, the words "or compartment" should be added after "zone" at lines c and d of point 3.

Article 2.2.XX.6.

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

Community comments:

The same conditions cannot apply to animals so different as horses, geese and chicks less than 12 days old.

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

1. were kept during the seasonally free period in a WNF seasonally free country or zone 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, zone until shipment; or

Community comments:

A serology could be realised as in article 7, in which the agent identification would be much more justified.

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.

Community comments:

The paragraph 3 should be paragraph 4, introduced by "or", and the paragraph 4, with its point c) deleted, should be paragraph 3, introduced by "AND".

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

Community comments:

An agent identification would be much more justified. Or the following wording:

"2. were subjected with positive results to a serological test according to the [Terrestrial Manual](#) to detect a protective titre of WNV neutralizing antibodies;"

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

Community comments:

What is the justification for this 15 days period?

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

Community comments:

The words "if not seropositive" should be added at the beginning of point 6.

7. were vaccinated 30 days before shipment or had antibodies against WNV.

Community comments:

Point 7 should be deleted. Both conditions are found above.

Article 2.2.XX.8.

When importing wild birds *Veterinary Administrations* should require the presentation of an *international veterinary certificate* attesting that

1. 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.

Community comments:

An agent identification would be justified.

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:

Part I: Details of dispatched consignment	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	

Community comments: The Community supports the OIE work in updating the model certificates.

In box I.3., the word "Administration" should be replaced by the word "Service".

COUNTRY:

II.a. Certificate reference number

Part II: Zoosanitary information

II. The undersigned Official Veterinarian certifies that the animal(s)/hatching eggs 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 Embryos, Ova and Semen

COUNTRY:

Part I: Details of dispatched consignment	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	Date of collection	
Approval number of the centre/team		Identification mark	Quantity		

Community comments: The Community supports the OIE work in updating the model certificates.

In box I.3., the word "Administration" should be replaced by the word "Service".

COUNTRY:

Part II: Zoosanitary information	II.a. Certificate reference number
	II. The undersigned Official Veterinarian certifies that the embryos/ova/semen 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 Products of Animal Origin

COUNTRY:

Part I: Details of dispatched consignment	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	

Community comments: The Community supports the OIE work in updating the model certificates.

In box I.3, the word "Administration" should be replaced by the word "Service" and in box I.4, the word "Veterinary" should be replaced by "Competent".

COUNTRY:

II.a. Certificate reference number

Part II: Zoosanitary information

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

Community comments: The Community supports the OIE work in updating the model certificates. In box I.3, "Administration" should be replaced by "Service"; in box I.4, the words "or Competent Authority" should be added; and in box I.7 and I.9 the words "or compartment" should be deleted.

Model Veterinary Certificate for International Trade in Bees and Brood Combs

COUNTRY:

Part I: Details of dispatched consignment	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					
Category		Breed / Variety	Quantity	Identification details	

COUNTRY:

II.a. Certificate reference number

Part II: Zoosanitary information

II. The undersigned Official Veterinarian certifies that the bees/brood comb(s) described above satisfy(ies) the following requirements:

Official Veterinarian

Name and address (in capital letters):

Qualification and title

Date:

Signature:

Stamp

APPENDIX X.X.X

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

Community comments:

The Community thanks the OIE for this works. It must be noted that whereas these new certificates are essential, the current horse passport and dog passport should remain in the Code.

Part I, Box I.3, the word "Administration" should be replaced by "Service".

Part I, Box I.4, the words "or Competent Authority" should be added.

Part I, Box I.23, the line "other" seems useless as all intended uses have been listed. Even use for research may be included in technical use.

Part II, Box II, the word Administration should be replaced by Authority.

Part II, Box II. a, the word "Services" should be replaced by "Authority". In the case of certificates for "products of animal origin" and "bees and brood combs", it should be added "or Competent Authority".

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).
- 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

Community comments:

The Community supports the modifications, but would like to introduce new changes in consequence of the last changes in the Definitions Chapter:

- **Replace the words Administration and Administrations respectively by the words Authority and Authorities.**
- **Change the last paragraph of article 1.2.1.2: delete the word "usually" in the first sentence, and delete the second sentence.**
- **In article 1.2.1.3, point d), add the words "and Veterinary Authority" after the words "Veterinary Services".**

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.
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*.

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

Community comments:

The Community welcomes the OIE work in this field.

It wishes to participate to this work and keeps its experts at OIE's disposition.

These Guidelines should also address the issue of feed homogeneity, which is an important part of feed safety. A too high concentration of one of the feed component because of bad homogeneity could lead to animal and/or public health hazards.

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.

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 Point⁶⁶ (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.

Assurance and certification

⁶⁶ 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).

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).