EUROPEAN UNION

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Subject: **84th Annual General Session of the OIE - May 2016**

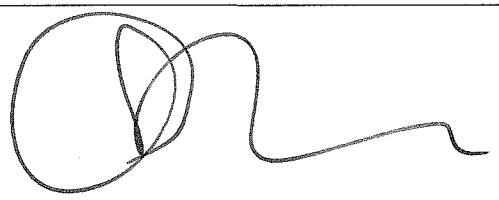
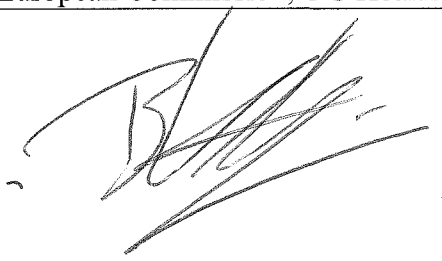
Dear Director General,

Please find attached, for your informal information, annexes indicating the intended positions of the European Union (EU) on the reports of the Terrestrial and Aquatic Animal Health Standards Commissions to be raised and drafts proposed for adoption at the 84th OIE General Session in May 2016 in Paris.

We take this opportunity to inform you that the EU supports the adoption of the draft revised chapters of the OIE *Terrestrial Manual* to be proposed for adoption in May.

We trust you will find this useful and we thank you for your continued cooperation.

Yours sincerely,

Christianne Bruschke CVO and OIE Delegate The Netherlands	Bernard Van Goethem Director for Crisis management in food, animals and plants European Commission, DG Health and Food Safety
	

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Annexes: 2

Copy: All Directors / Chief Veterinary Officers of the EU 28 and Iceland, Liechtenstein, Norway, Switzerland, and Albania, fYROM, Montenegro, Serbia and Turkey.

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REPORT OF THE MEETING OF THE OIE TERRESTRIAL ANIMAL HEALTH STANDARDS COMMISSION

Paris, 8–19 February 2016

EU comments

The EU would like to commend the OIE for its work and thank in particular the Code Commission for having taken into consideration EU comments on the Terrestrial Code submitted previously.

A number of general comments on this report of the February 2016 meeting of the Code Commission as well as the intended positions of the EU on the draft Terrestrial Code chapters proposed for adoption at the 84th OIE General Session are inserted in the text below, while specific comments are inserted in the text of the respective annexes of the report.

Please note that the EU positions re. Annexes 4 through 22 (part A) as well as the EU comments on Annexes 33, 34 and 39 are appended to this document, while the EU comments on Annexes 23 through 38 (part B) will be provided to the OIE separately in July 2016.

The EU would like to stress once again its continued commitment to participate in the work of the OIE and to offer all technical support needed by the Code Commission and its ad hoc groups for future work on the Terrestrial Code.

The OIE Terrestrial Animal Health Standards Commission (the Code Commission) met at OIE Headquarters in Paris from 8 to 19 February 2016. The list of participants is attached as **Annex 1**.

The Code Commission thanked the following Member Countries for providing written comments on draft texts circulated after the Commission's September 2015 meeting: Argentina, Australia, Belize, Brazil, Canada, Chile, China, Chinese Taipei, Costa Rica, Guatemala, Honduras, Japan, Korea, Mexico, New Zealand, Norway, Panama, Singapore, South Africa, Switzerland, Thailand, the United States of America (USA), Uruguay, the Member States of the European Union (EU), the African Union Interafrican Bureau for Animal Resources (AU-IBAR) on behalf of African Member Countries of the OIE. Comments were also received from the International Coalition for Animal Welfare (ICFAW), the International Feed Industry Federation (IFIF) and the International Egg Commission (IEC). Some comments were received too long after the deadline to be considered.

The Code Commission reviewed Member Countries' comments that had been submitted on time and amended texts in the OIE *Terrestrial Animal Health Code* (the *Terrestrial Code*) where appropriate. The amendments are shown in the usual manner by 'double underline' and '~~strikethrough~~' and may be found in the Annexes to the report. In Annexes 4, 5, 6, 7, 8, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 23, 26 and 37, amendments made at this meeting are highlighted with a coloured background in order to distinguish them from those made previously. The Code Commission considered all Member Countries' comments and documented its responses. However, because of the large volume of work, the Commission was not able to draft a detailed explanation of the reasons for accepting or not each of the comments received and focused its explanations on the major ones.

Furthermore, Member Countries are reminded that comments submitted without a rationale or obvious logic are difficult to evaluate and respond to. Similarly if comments are resubmitted without modification or new

justification, the Commission will not, as a rule, repeat previous explanations for decisions. The Commission encourages Member Countries to refer to previous reports when preparing comments on longstanding issues. The Commission also draws the attention of Member Countries to those instances where the Scientific Commission for Animal Diseases (the Scientific Commission) or an *ad hoc* Group has addressed Member Countries' comments and proposed amendments. In such cases the rationale for such amendments is described in the Scientific Commission's or *ad hoc* Group's report, and the Code Commission encourages Member Countries to review its report together with those of the Scientific Commission and *ad hoc* Groups.

Member Countries should note that texts in Part A of this report are proposed for adoption at the 84th General Session in May 2016. Texts in Part B are submitted for comment. Comments received will be addressed during the Commission's meeting in September 2016. The reports of meetings (Working Groups and *ad hoc* Groups) and other related documents are also attached for information in Part B of this report.

The Code Commission again strongly encourages Member Countries to participate in the development of the OIE's international standards by submitting comments on this report, and prepare to participate in the process of adoption at the General Session. Comments should be submitted as word processor files rather than pdf files because pdf files are difficult to incorporate into the Code Commission's working documents. Comments should be submitted as specific proposed text changes, supported by a structured rationale. Proposed deletions should be indicated in '~~strikethrough~~' and proposed additions with '<u>double underline</u>'. Examples of how this can be done are attached as **Annex 43**. Member Countries should not use the automatic 'track-changes' function provided by word processing software as such changes are lost in the process of collating Member Countries' submissions into the Commission's working documents.

Comments on this report must reach OIE Headquarters **by 29th July 2016** to be considered at the September 2016 meeting of the Code Commission.

All comments on Articles 8.8.4. and 8.8.4bis. must reach OIE Headquarters by **31st May 2016.**

All comments should be sent to the OIE International Trade Department at: trade.dept@oie.int.

A. MEETING WITH THE DIRECTOR GENERAL

The Code Commission met with Dr Monique Eloit, Director General, and Dr Brian Evans, Deputy Director General (Animal Health, Veterinary Public Health, International Standards), on 16 February 2016. Dr Eloit welcomed the Code Commission members and thanked them for their support and commitment to achieving OIE objectives.

Among other matters, Dr Eloit and Dr Evans discussed the implementation of the key objectives of the sixth strategic plan, and how that may impact the work of the Code Commission.

Dr Eloit also noted that the WTO dispute settlement case on implementation of sanitary measures related to African swine fever control provided an opportunity for the OIE to observe how the stakeholders engaged in that case view the OIE procedures for standard development. She explained that key steps to be implemented in the near future, concerning the Code Commission, include:

- the creation of a single department to serve as the Secretariat of all four Specialist Commissions with the aim of facilitating closer collaboration among the Commissions, and easier document sharing through common support services;

- the development of an internal staff training programme to strengthen the skills of this scientific secretariat,

- refurbishment of the OIE website to provide easier access to various technical meeting reports, and improve the transparency of OIE work in general, to enhance Member Countries' participation in standard development.

Dr Eloit also explained the plan to improve the election process for membership of the Specialist Commissions. The aim is to better inform the voting Delegates on the scientific expertise and credentials of candidates standing for election to the Specialist Commissions. In the context of strengthening scientific excellence, Dr Eloit also highlighted the need for closer and stronger relationships with relevant scientific communities, including in new fields of science, and the next generation of scientists.

Dr Evans noted the importance of maintaining discipline in the standard development procedures, including principle of the two-year cycle of standard development, effective coordination of the Specialist Commission work programmes, and participation of Specialist Commission members in relevant *ad hoc* Group meetings.

Dr Etienne Bonbon, on behalf of the Code Commission, thanked Dr Eloit and Dr Evans for their support. He also explained the Code Commission plan to identify future draft chapters to be proposed for adoption in May in the report of the previous September Code Commission's meeting. This extension of notice for standards to be proposed for adoption is designed to give Member Countries and all interested parties more time to consider their content and implementation details ahead of adoption.

B. ADOPTION OF THE AGENDA

The draft agenda circulated prior to the meeting was discussed, updated, and agreed. The adopted agenda of the meeting is attached as **Annex 2**.

C. MEETING WITH THE AQUATIC ANIMAL HEALTH STANDARDS COMMISSION

The President of the Code Commission met with the President of the Aquatic Animal Health Standards Commission (Aquatic Animals Commission) on several occasions during the week to discuss issues of mutual interest, notably:

- proposed new glossary definitions for OIE standard and OIE guideline;
- proposed revised Chapters 1.1. of the *Aquatic* and *Terrestrial Codes*;
- proposed revised Chapters 1.2. of the *Aquatic* and *Terrestrial Codes*;
- proposed restructuring of Section 4 of the *Aquatic* and *Terrestrial Codes*;
- proposed development of a revised guidance document for *ad hoc* Groups on the application of the listing criteria (Chapter 1.2).

D. MEETING WITH THE BIOLOGICAL STANDARDS COMMISSION

The President of the Code Commission was invited to meet with the Biological Standards Commission to discuss issues of mutual interest, notably:

- progressive adoption of the convention for naming of OIE listed diseases agreed by the World Assembly of Delegates in both the *Codes* and the *Manuals*;
- update of the Code Commission work programme and coordination of work programmes (e.g. vaccination, lumpy skin disease, BSE, etc.);
- proposed new glossary definitions for OIE standard and OIE guideline;
- diagnostic tests for *Mycobacterium tuberculosis* complex, including in species other than bovids, i.e. goats and New World camelids, and future revision of the *Manual* chapter on tuberculosis;
- diagnostic tests for 'classical BSE' and 'atypical BSE' and current revision of the *Manual* chapter on BSE;
- discrepancies between the *Code* and the *Manual* on conditions for collection of semen;
- Member Countries' concerns about the adequacy of OIE risk management recommendations for the growing production and trade of *in vitro* produced embryos;
- pathogenicity of bluetongue strains, including vaccine strains.

E. REPORT ON THE JOINT MEETING OF THE CODE COMMISSION AND THE SCIENTIFIC COMMISSION

The Code Commission and the Scientific Commission met on 11th February to discuss issues of mutual interest. The report of this joint meeting is attached as **Annex 3**.

F. EXAMINATION OF MEMBER COUNTRIES' COMMENTS AND WORK OF RELEVANT EXPERT GROUPS

Item 1 General comments of Member Countries

General comments were received from New Zealand and EU.

The Code Commission agreed with a Member Country's comment that Delegates be notified when the new edition of the *Code* is uploaded onto the OIE website and recommended that Headquarters send a letter to Delegates to notify them of this. The Code Commission also suggested that the Delegates be provided with a list of chapters that had been amended.

In response to Member Countries' comment and after discussion with Headquarters, the Code Commission recommended that each *Code* chapter be footnoted with the date of last adoption of revisions to the chapter (whether small or large) to ensure that readers can more easily find this information. The Code Commission requested that Headquarters implement this request in the next edition (2016) of the *Code*.

EU comment

The EU thanks the OIE for having taken into account its suggestion regarding the indication of the date of last adoption of Code chapters.

Item 2 Horizontal Issues

a) User's guide

Comments were received from Australia, Argentina, China, Mexico, New Zealand, Switzerland, EU and AU-IBAR.

The Code Commission agreed that although the User's Guide had only been recently adopted and due to the specific nature of this text, it would consider all Member Countries' comments including those received for text that had not been proposed for amendment.

The Code Commission agreed with a Member Country's suggestion to add a new point regarding collaboration between Veterinary Authorities and other Competent Authorities, but considered it should be inserted in Chapter 3.1. rather than the User's guide.

The Code Commission agreed with a comment from Headquarters to amend text in point 1 of Part B to clarify that terms included in the Glossary are those for which the dictionary definition is inadequate for the purposes of the *Code*.

The Code Commission did not accept a Member Country's request to add 'oocytes' to point 6 of Part B because this will be addressed as part of the Code Commission's future work. It also noted that no rationale was provided to support this request.

In response to a Member Country's comment regarding the use of 'bis', the Code Commission reiterated that chapter-numbering changes are implemented after adoption of revised or new chapters, e.g. the proposed Chapter 1.2.bis will be renumbered to Chapter 1.3. once adopted.

The Code Commission proposed a modification of points 1) and 2) of part C of the User's guide, taking into account the proposed structural change in Section 1.

In response to a Member Country's comment, the Code Commission agreed to amend the sentence in Part C point 3. to clarify that zoning and compartmentalisation should be considered as tools, 'among others', to control diseases and to facilitate safe trade.

The Code Commission did not consider a number of comments submitted by a Member Country because they were without a supporting rationale or obvious logic. The Code Commission reminded Member Countries that a rationale should always be provided to assist the Code Commission in considering comments.

The Code Commission did not accept a Member Country's suggestion to revert to 'exporting' country or zone in Section C points 4, and 5b because in the framework of the *Code* only 'exporting country' is defined (not 'exporting zone') and it is the country or zone of origin, which is linked to the health status of the animals.

The Code Commission did not agree with a Member Country's suggestion to include in Part C point 5c text regarding the language used in certificates because this detail is included in Chapter 5.1. The Code Commission also decided to delete the text 'As stated in Article 5.2.3.' in the same clause as this level of cross-referencing in the User's Guide is not warranted.

In answer to recurring Member Countries' comments seeking clarification of the relationship between the surveillance requirements given in the disease-specific chapters and Chapter 1.4., the Code Commission inserted the following new point 2bis in Section C:

2bis. Freedom from a disease, infection or infestation

Article 1.4.6. provides general principles for declaring a country or a zone free from a disease, infection or infestation. This Article applies when there are no specific requirements in the disease-specific chapter.

In future, the Code Commission will also systematically consider requirements for historical freedom in new chapters and revisions of existing chapters.

The revised User's guide is attached as **Annex 4** and will be proposed for adoption at the 84th General Session in May 2016.

EU position

The EU thanks the OIE and supports the adoption of this modified User's Guide.

b) Glossary

Comments were received from China, Japan, Mexico, New Zealand, Norway, Singapore, Switzerland, USA, EU and AU-IBAR.

The Code Commission noted that some defined terms in the glossary of the *Code* and *Manual* differ. The Code Commission requested Headquarters to review the terms in the glossary of both the *Code* and the *Manual* and prepare a document for the Code Commission to review at its next meeting and discuss with the Biological Standards Commission.

Acceptable risk

No comments were received on the proposal to delete this definition.

The definition for ‘acceptable risk’ will be proposed for deletion at the 84th General Session in May 2016.

Animals

Following previous discussions on reptiles in the Code Commission (Sept. 2014) and with Headquarters, Member Countries, concerned stakeholders and the regions, the Code Commission proposes to amend the definition of ‘animals’ to include reptiles.

The revised definition of ‘animals’ is included in the attached Annex 5 and will be proposed for adoption at the 84th General Session in May 2016.

Appropriate level of protection

The Code Commission did not agree with a Member Country’s request to retain the glossary definition of appropriate level of protection, and reminded Member Countries that this term is used only once in the *Code* (Chapter 5.3.) and therefore does not meet the criteria to be included in the glossary.

The definition of ‘appropriate level of protection’ will be proposed for deletion at the 84th General Session in May 2016.

Equivalence of sanitary measures

Since this term is only used in Chapter 5.3. of the *Code*, it does not meet the criteria to be included in the glossary.

The definition of ‘equivalence of sanitary measures’ will be proposed for deletion at the 84th General Session in May 2016.

Stamping-out policy

The Code Commission did not accept a Member Country’s request to reinstate the proposed deletion of text in point a) and reminded Member Countries that this text was proposed for deletion because they did not want the definition to be too detailed and prescriptive.

In response to a Member Country’s comment, the Code Commission amended the text of point b to read ‘the disposal of carcases and, where relevant, animal products,’ to clarify that animal products that do not present a disease transmission risk need not be destroyed.

The amended definition for ‘stamping-out policy’ is included in Annex 5 and will be proposed for adoption at the 84th General Session in May 2016.

Casings

The Code Commission noted that this definition defines tissues submitted to a process, rather than a safe commodity *per se*, and that the risk mitigation recommendations in disease-specific chapters should take into account this process. The Code Commission reviewed Member Countries’ comments and having taken advice from experts updated the definition to include oesophagus and to limit treatments to those always applied.

The intended use of casings is as an edible envelope of a foodstuff, being a sausage. To this purpose, bladders are included and, indeed, for some local specialities the oesophagus is used as the edible envelope. The Code Commission was informed that stomachs are an entirely different product in that respect. They are not used as an edible envelope but as an ingredient. In addition, they are produced fresh, do not undergo the indicated processing steps (tissue scraping and defatting that defines a casing) and are subsequently frozen as a means of preservation. The Code Commission thus decided to include only the intestinal tract, bladder and oesophagus as part of the definition of casings and leave stomachs out.

The Code Commission decided to delete the word 'dried' because casings are normally salted but not always dried.

The definition of 'casings' is included in **Annex 5** and will be proposed for adoption at the 84th General Session in May 2016.

EU position

The EU thanks the OIE and supports the adoption of this modified glossary, with the exception of the modified definition of "casings" which cannot be accepted as proposed. Important comments that should be taken into account before adoption are inserted in the text of Annex 5.

OIE Standard

In response to a Member Country's comments, the Code Commission reiterated that both an 'OIE Standard' and an 'OIE Guideline' may include recommendations, and that the definition of an 'OIE Standard' is intended to distinguish standards from guidelines by the General Session process required for adoption of all 'OIE Standards'. It also noted that throughout the English version of the *Code,* where the word 'recommendation' is used the *Oxford English Dictionary* definition applies.

The Code Commission made several amendments to the definition in response to comments from Member Countries, the Scientific Commission, the Biological Standards Commission and the Aquatic Animals Commission to improve clarity, and removed the phrase 'should be used consistently' from the draft definition since recommendations (using the word 'should') do not form part of a definition. It did not accept Member Countries' suggestion to add the phrase 'including through facilitating safe trade' since the existing definition is aligned with the language of the Sixth Strategic Plan, and trade facilitation is addressed in Section 5 of the *Code*.

A discussion took place with the Aquatic Animals Commission on whether a common definition for an 'OIE Standard' and an 'OIE Guideline' across Terrestrial and Aquatic *Codes* and *Manuals* or two different definitions for terrestrial animals and aquatic animals might create conflicts between the different volumes. The issue was forwarded to the OIE Council. In the meantime the two options are presented respectively in the reports of the Aquatic and Code Commissions.

EU comment

The EU insists that the definitions of "OIE Standard" and "OIE Guideline" must be identical in all OIE Standards, i.e. in the Terrestrial and Aquatic Codes and Manuals. Different definitions of these terms in the individual OIE Standards would be unacceptable for the EU.

The revised definition for 'OIE Standard' is included in **Annex 23** for Member Countries' comments.

OIE Guideline

The Code Commission rearranged the text of this definition to follow the structure of the definition used for 'OIE Standard', and made several amendments in response to comments from Member Countries, the Scientific Commission, the Biological Standards Commission and the Aquatic Animals Commission to improve clarity.

The Code Commission acknowledged Member Countries' comments highlighting the need to review the use of these terms throughout the *Code* and align them with the new definitions once adopted.

The revised definition for 'OIE Guideline' is included in **Annex 23** for Member Countries' comments.

Zone/Region, Infected zone, Free zone, Containment zone* and *Protection zone

Revisions to the glossary definitions of these terms were discussed with the Scientific and Biological Standards Commissions, and proposed revisions of these definitions are included in **Annex 23** for Member Countries' comments.

EU comment

The EU thanks the OIE and in general supports the proposed changes to the glossary. Comments are inserted in the text of Annex 23.

c) Convention for naming diseases in the Code

In response to a Member Country's comment, the Code Commission clarified that the new convention for naming a disease is to use the wording 'infection with [pathogenic agent]'. It noted that if the vernacular disease name differs from this format, the Code Commission will decide whether to include the vernacular name in brackets in the title only, e.g. Infection with *Chlamydophila abortus* (Enzootic abortion of ewes, ovine chlamydiosis). The Code Commission noted that this convention will be implemented with all new chapters and for existing chapters as they come up for review.

The Code Commission also noted that for describing the disease status of a country or zone, if the disease is named after the pathogenic agent name, then the country or zone status will be described as 'free from infection with [pathogenic agent]', e.g. free from infection with *Chlamydophila abortus*, or free from infection with *Brucella* spp. However, if the pathogenic agent is named after the vernacular name of the disease, the country or zone status will be described as 'free from [disease]', e.g. free from foot and mouth disease or free from rabies.

The Code Commission noted that it will continue to discuss this naming convention with the Biological Standards Commission to ensure appropriate harmonisation of disease chapter titles in the *Code* and the *Manual*.

Item 3 Notification of diseases, infections and infestations, and provision of epidemiological information (Chapter 1.1.)

Comments were received from Japan, New Zealand, Norway, EU and AU-IBAR.

In response to comments from Member Countries and the Aquatic Animals Commission, the Code Commission modified the proposed definition of an event and moved it to Article1.1.2., modified the previous point 3 of Article 1.1.5. to refer to country or zone, and deleted Article 1.1.5. point 2 which becomes redundant with that modification to the previous point 3. (The points of Article 1.1.5. were renumbered accordingly.)

The Code Commission did not accept a Member Country's suggestion to delete 'sufficient' from Article 1.1.4. point 2b since it considered this qualification usefully highlights the judgement required on the sufficiency of scientific information available to determine whether the emerging disease meets the criteria for listing.

The Code Commission did not accept Member Countries' suggestion to replace Article 1.1.4. point 2a (ii) with 'no more new cases are occurring' since that text would be a duplication of point 2a (i).

The Code Commission did not accept Member Countries' suggestion to add 'and re-emerging' to Article 1.1.6. point 1 because 're-emerging' is an unnecessary distinction from 'emerging' in this clause.

The Code Commission replaced the reference to 'WAHID' with 'WAHIS' in Article 1.1.6. to align with the revised OIE description of its World Animal Health Information System. In response to comments from Member Countries and the Aquatic Animals Commission, it also made several minor amendments to correct grammar, spelling and syntax and to harmonise with the *Aquatic Code* throughout the chapter.

The revised Chapter 1.1. is attached as **Annex 6** and will be proposed for adoption at the 84th General Session in May 2016.

EU position

The EU supports the adoption of this modified chapter.

In general, certain definitions in the Glossary should be reviewed further to the new convention of including "infestations" along with "diseases" and "infections", whenever the latter two terms are used (e.g. in the definition of "Notification").

Item 4 Criteria for the inclusion of diseases, infections and infestations in the OIE list (Chapter 1.2.)

Comments were received from Argentina, Australia, Canada, Mexico, Switzerland, EU and AU-IBAR.

The Code Commission replaced the words 'the OIE list' in the first clause of Article 1.2.1. with 'Chapter 1.2bis.' to align with the *Aquatic Code.*

It considered a Member Country's suggestion to add 'in the *Terrestrial Code*' to the third paragraph of Article 1.2.1. to be unnecessary additional words, and it did not accept the suggestion of Member Countries to delete 'normally' from this paragraph because some listed diseases do not have corresponding chapters.

The Code Commission accepted a Member Country's suggestion to refer to methods of validation in the final clause of Article 1.2.1.

It did not accept a Member Country's suggestion to replace 'precise' with 'accurate' in Article 1.2.2. point 3 since the *Oxford English Dictionary* definition of 'precise' is more appropriate for case definition.

The Code Commission amended Article 1.2.2. point 3c in response to Member Countries' comments. However it considered Member Countries' suggestions to delete 'any' from threats to the viability of a wildlife population to be inconsistent with the OIE's biodiversity objectives.

In response to comments from Member Countries and the Aquatic Animals Commission, the Code Commission also made several minor amendments to correct grammar, spelling and syntax throughout the chapter.

The revised Chapter 1.2. is attached as **Annex 7** and will be proposed for adoption at the 84th General Session in May 2016.

EU position

The EU thanks the OIE and in general supports the adoption of this modified chapter. A comment is inserted in the text of Annex 7.

Diseases listed by the OIE (Chapter 1.2bis.)

Comments were received from China, Honduras, EU and AU-IBAR.

The Code Commission amended the title of this chapter in response to a Member Country's observation that it should be consistent with the title of Chapter 1.2.

Member Countries' comments on the hyphenation of 'foot-and-mouth disease' were referred to the Biological Standards Commission to ensure that consistent hyphenation or not of this disease name is applied in all OIE documents.

In response to a suggestion from Member Countries, the Code Commission changed the spelling of Crimean Congo hemorrhagic fever to align with that used by the International Committee on Taxonomy of Viruses and in the *Manual*.

It also accepted Member Countries' argument to retain '(porcine cysticercosis)' after 'Infection with *Taenia solium*' in this chapter and Chapter 15.3. given that the recently adopted *Manual* chapter is titled 'Cysticercosis'.

The Code Commission did not accept Member Countries' suggestion to separate sheep pox and goat pox into two disease listings because the disease in both species is caused by the same agent.

It also did not accept Member Countries' suggestion to move fowl typhoid to a multispecies listing of *Salmonella* complex, since fowl typhoid is a specific disease and fulfils the listing requirements.

In response to a Member Country's request for greater clarity of 'Infection with influenza A viruses of high pathogenicity in birds other than poultry including wild birds', the Code Commission noted that 'wild birds' means all wild bird species according to the definition of 'wildlife' in the glossary (feral, captive wild and wild), and italicised the word 'poultry' since the glossary definition applies.

The revised draft new Chapter 1.2bis. is attached as **Annex 8** and will be proposed for adoption at the 84th General Session in May 2016.

EU position

The EU thanks the OIE and in general supports the adoption of this new chapter.

The EU draws the attention of the OIE to the need, once this new chapter is adopted, to amend the reference in the glossary definition of "listed disease" (which now reads "means a *disease, infection* or *infestation* listed in Article 1.2.3. after adoption by the World Assembly of OIE Delegates"). This should ideally be done in parallel to the adoption of this new Chapter 1.2.bis. (Furthermore, it is understood that should the current Chapter 1.1.3. be deleted as proposed, this chapter and its articles as well as any reference thereto will be renumbered accordingly once adopted.)

A further comment is inserted in the text of Annex 8.

Item 5 Prescribed and alternative diagnostic tests for OIE listed diseases (Chapter 1.3.)

Comments were received from Australia, Chile, New Zealand, Switzerland and EU.

The Code Commission noted that all but one Member Countries' comments supported deletion of Chapter 1.3. given that the content of this chapter is included in the *Manual*.

Chapter 1.3. is attached as **Annex 9** and will be proposed for deletion at the 84th General Session in May 2016.

EU position

The EU supports the deletion of this chapter.

Item 6 Animal health surveillance (Chapter 1.4.)

The Code Commission reviewed Chapter 1.4. for consistency both within the chapter and with the remainder of the *Code*, and discussed the issue with the Scientific Commission.

It amended the title of Article 1.4.6. to 'Surveillance to demonstrate freedom from a disease, infection or infestation', and the title Article 1.4.6. point 1 to 'Requirements to declare a country or a zone free', deleting 'without pathogen specific surveillance' to avoid conflict with Article 1.4.6. point 1b. Corresponding amendments to reflect the change in these titles were made throughout the article, and the numbering of points 1a, 1b and point 2 were aligned.

Amendments to correct grammar and improve syntax were also made throughout the chapter.

The revised Chapter 1.4. is attached as **Annex 24** for Member Countries' comments.

EU comment

The EU in general supports the proposed changes to this article. Comments are inserted in the text of Annex 24.

Item 7 Procedures for self-declaration and for official recognition by the OIE (Chapter 1.6.)

Comments were received from Australia, Chile, Mexico, Switzerland and EU.

The Code Commission agreed with Member Countries that the reference to Chapter 1.1.3. of the *Manual* systematically included as a proposed amendment in the clauses on Veterinary Services in this chapter in September was incorrect, and that the appropriate cross reference should be to Chapter 1.1. of the *Code*. This error will be addressed in the wider review of Chapter 1.6. that is about to be undertaken by Headquarters, the Scientific Commission and the Code Commission.

To facilitate the review of Chapter 1.6. Headquarters will prepare three options for consideration by the Code Commission at its September 2016 meeting. The three options that will be considered are:

– separate chapters for each disease, all located in Section 1 of the *Code*;

– separate chapters for each disease in a new section of the *Code*;

– a short Chapter 1.6. covering general principles only, and relocation of each questionnaire to its corresponding disease-specific chapter.

EU comment

The EU supports reviewing Chapter 1.1.6. For the sake of clarity and user-friendliness, the EU would prefer the third option as described above. Indeed, having a short Chapter 1.1.6. covering only the general principles and moving the individual questionnaires to the end of the respective disease specific chapters would seem logical as it would put all the relevant information pertaining to the status of one particular disease in one place.

Item 8 Evaluation of Veterinary Services (Article 3.2.14.)

Comments were received from Australia, Argentina, Japan, Mexico, Switzerland, EU and AU-IBAR.

In response to Member Countries' comments, the Code Commission acknowledged that the proposed new clause 'animal welfare controls at export and import of animals' in Article 3.2.14. point 7b (i) could be regarded as inconsistent with Article 3.2.7. However, it considered that the proposed wording of the chapeau text of Article 3.2.14. point 7b (i) allows interpretation of this point to accommodate diverse situations amongst Member Countries, and that the alternatives offered were no better than the current text.

The Code Commission did not accept Member Countries' suggestions to amend currently adopted text in Article 3.2.14., for which comment was not sought, since the suggestions offered no significant improvement on the current text and were not justified by a rationale.

The Article 3.2.14. is attached as **Annex 10** and will be proposed for adoption at the 84th General Session in May 2016.

EU position

The EU supports the adoption of this modified chapter.

Item 9 Disease prevention and control

a) Zoning and compartmentalisation (Chapter 4.3.)

The Code Commission reviewed, revised and restructured this chapter, along with the glossary definitions of *zone/region*, *infected zone*, *free zone*, *containment zone*, and *protection zone*. These proposed revisions were further discussed with the Scientific Commission.

The revised Chapter 4.3. is attached as **Annex 25** for Member Countries' comments

EU comment

The EU in general supports the proposed changes to this chapter. Comments are inserted in the text of Annex 25.

b) Collection and processing of bovine, small ruminant and porcine semen (Chapter 4.6.)

The Code Commission reviewed the advice of the Biological Standards Commission on this chapter and asked Headquarters to critically review the entire chapter especially for consistency with disease-specific chapters, seek further expert advice, and propose necessary revisions for the Code Commission to consider at its September 2016 meeting.

c) Collection and processing of in vitro produced embryos/oocytes from livestock and horses (Chapter 4.8.)

Comments were received from Australia and Chile.

The Code Commission noted comments from Member Countries regarding the lack of specific risk management provisions for *in vitro* produced embryos. The Code Commission referred the questions raised to the Biological Standards Commission and Headquarters to inform their approach to future updating of this chapter.

d) Restructuring of *Terrestrial Code* Section 4 'Disease Prevention and Control'

The Code Commission reviewed the planned restructure of Section 4 of the *Aquatic Code* by the Aquatic Animals Commission. It will reflect on how Section 4 of the *Terrestrial Code* may be also restructured for better logical flow and clarity, and will consider further the best approach to this task at its September meeting.

In parallel with this work, the Code Commission will work on developing a new chapter on outbreak management.

e) Report of the *ad hoc* Group on vaccination

The Code Commission reviewed the *ad hoc* Group report, including a skeleton chapter. It commended the work done, discussed the likely outcomes with the Scientific Commission, and will closely follow the ongoing development of this chapter. The Code Commission recommends that the Article structure of this chapter should align with established *Code* format to facilitate future ease of use and cross referencing.

Item 10 Trade measures

a) OIE procedures relevant to WTO SPS Agreement (Chapter 5.3.)

Comments were received from Australia, Mexico, New Zealand, Switzerland, USA, EU and AU-IBAR.

In response to one Member Country's comment disagreeing with the proposed deletion of the term 'appropriate level of protection,' the Code Commission explained that even without that specific terminology, such a concept is maintained as 'the level of protection it deems appropriate,' notably in Article 5.3.5.

The Code Commission did not accept Member Countries' suggestion to add further explanation of the SPS Agreement in Article 5.3.1. as such an explanation is unnecessary in an OIE standard.

The Code Commission accepted Member Countries' suggestion to replace 'judgement' with 'determination' in the title of Article 5.3.2. and as relevant throughout the chapter to distinguish the process from the final decision.

The Code Commission agreed with a Member Country's suggestion to replace '*hazard*' with '*risk*' in point 2 of Article 5.3.5. and point 1 of Article 5.3.6. in accordance with the glossary definitions.

The Code Commission developed a point 10.bis of Article 5.3.5. to reflect the principle of non-discrimination.

The Code Commission accepted a Member Country's suggestion to develop a point 10.ter of Article 5.3.5. to reflect actual practice as a possibility.

In response to Member Countries' suggestions, the Code Commission added a sentence to point 13 of Article 5.3.5. regarding the situation when measures more stringent than OIE standards are applied.

The Code Commission amended point 13 of Article 5.3.5., point 5c of Article 5.3.6. and point 1d (iv) and point 2e (iv) of Article 5.3.7. to refer to OIE guidelines in addition to OIE standards.

The Code Commission accepted a Member Country's suggestion to add 'animal health situation of the exporting country' as a factor for consideration in the last paragraph of Article 5.3.6.

The Code Commission took note of information provided by a Member Country about an *ad hoc* consultation procedure recently adopted by the WTO SPS Committee which may assist informal dispute mediation.

The Code Commission deleted point 2 (i) of Article 5.3.7., as it does not pertain to the scope of this article, and notification to the OIE would be more efficient than multiple bilateral information provisions, which may be impractical.

The Code Commission also amended wording in several places throughout the chapter for consistency, improved syntax and correct grammar.

The revised Chapter 5.3. is attached as **Annex 26** for Member Countries' comments.

EU comment

The EU thanks the OIE and in general supports the proposed changes to this chapter. Comments are inserted in the text of Annex 26.

In general, the EU suggests adding a statement in this chapter clarifying that for the purposes of the Terrestrial Code, the terms "zoning" and "regionalisation" have the same meaning. Indeed, this is particularly important as the WTO SPS Agreement uses the term "regionalisation", whereas the OIE Code uses the term "zone", and the OIE

suggests deleting such a clarifying statement from Chapter 4.3. (see also EU comment to Annex 25).

b) Draft new chapter on criteria for assessing the safety of commodities (Chapter 2.X.)

Comments were received from Australia, Argentina, Chile, Japan, New Zealand, Switzerland and EU.

The Code Commission discussed the appropriate *Code* Section for this chapter and agreed to place it in Section 2 'Risk Analysis', once it is adopted.

The Code Commission reviewed Member Countries' comments and noted that some Member Countries may misunderstand the purpose of this chapter. This chapter is not to provide guidance to Member Countries to assess safety of commodities, but to describe how the lists of safe commodities are developed by *ad hoc* Groups and specialist commissions. The Code Commission reminded Member Countries that a similar approach is taken for 'Chapter 1.2. Criteria for the inclusion of diseases, infections and infestations in the OIE list'. For this reason, suggestions from one Member Country to significantly redraft the text were not accepted.

The Code Commission did not agree with a Member Country's suggestion to simplify the title of the chapter, clarifying that the existing title is appropriate in this context.

The Code Commission accepted a Member Country's suggestion to replace the title of Article 2.X.1. with "General provisions".

The Code Commission agreed with Member Countries' comments that the word "safety" in this chapter is also applied to human health consideration and amended the first paragraph of Article 2.X.1.

The Code Commission agreed with Member Countries' comments to replace "products" with "commodity" as far as it relates to the list, as appropriate throughout the chapter, because 'commodity' is what is traded.

In response to Member Countries' suggestions, the Code Commission modified the wording in the second paragraph of Article 2.X.1. to align it with the glossary definition of "safe commodity."

In response to a Member Country's comment, the Code Commission replaced the word 'concentration' with 'dose' in point 1 of Article 2.X.2.

The Code Commission did not accept a Member Country's suggestion to elaborate examples in point 2b of Article 2.X.2.

The Code Commission did not accept Member Countries' suggestions to add a provision concerning precaution to avoid contamination, recalling the purpose of this chapter is limited to the assessment of the commodity's safety.

The revised Chapter 2.X. is attached as **Annex 27** for Member Countries' comments.

EU comment

The EU thanks the OIE and in general supports this draft new chapter. A comment is inserted in the text of Annex 27.

Item 11 Veterinary public health: Antimicrobial resistance

a) Harmonisation of national antimicrobial resistance surveillance and monitoring programmes (Chapter 6.7.)

Comments were received from Canada, Switzerland and EU.

The Code Commission acknowledged that detailed comments were provided throughout the chapter, although the changes proposed in its September 2015 meeting report are for Article 6.7.3., point 3 and point 5 only.

Noting also the revision that was made at the meeting of the *ad hoc* Group on Antimicrobial resistance in January 2016, the Code Commission decided to review all comments from Member Countries, the report of the *ad hoc* Group and the proposal from the Scientific Commission at the Code Commission's next meeting in September 2016.

b) Monitoring of the quantities and usage patterns of antimicrobial agents used in food-producing animals (Chapter 6.8.)

Comments were received from Australia, Canada, Japan, Switzerland, USA, EU and AU-IBAR.

In response to a Member Country's comment, the Code Commission noted that, although the entire phrase 'therapeutic use of antimicrobial agents' is not present in the chapter, the word 'therapeutic' is present as a 'type of use.' According to the conventions of the *Code*, this is sufficient to define the term.

In response to a Member Country's comment, the Code Commission replaced 'infectious diseases' with 'infection'.

The Code Commission did not accept a Member Country's proposal to add 'preventing' to the definition of therapeutic use in Article 6.8.1. The Code Commission noted that the Codex Alimentarius Commission clearly differentiates '*Disease Treatment/Therapeutic Use*' from '*Disease Prevention/Prophylactic Use*' (CAC/RCP 61-2005).

The Code Commission did not accept a Member Country's suggestion to delete 'controlling' from the definition of therapeutic use in Article 6.8.1. as no rationale was provided.

The Code Commission did not accept a Member Country's suggestions of minor changes in the text which were not sent for comments, as such changes would not significantly improve the text.

The revised Chapter 6.8. is attached as **Annex 11** and will be proposed for adoption at the 84th General Session in May 2016.

EU position

The EU cannot support the adoption of this modified chapter as proposed. An important comment is inserted in the text of Annex 11 that should be taken into account before adoption.

Item 12 Veterinary public health: Zoonoses and food safety

a) Draft new chapter on prevention and control of *Salmonella* in commercial cattle production (Chapter 6.X.)

b) Draft new chapter on prevention and control of *Salmonella* in pig production systems (Chapter 6.Y.)

Dr Gillian Mylrea, Deputy Head, International Trade Department, informed the Code Commission that at the 47th Session of the Codex Committee on Food Hygiene (held in November 2015) the Committee reviewed the draft Codex Guidelines for the Control of *Salmonella* spp. in Beef and Pork Meat (CX/FH 15/47/5) and agreed to forward the proposed draft Guidelines for adoption at Step 5/8 (with omission of Steps 6/7) by the Codex Alimentarius Commission that will meet in June 2016.

Dr Mylrea noted that although the Codex Guidelines cover the whole farm continuum, the section on primary production, for both pork and beef sections, provides a cross-reference to the draft OIE chapters currently under development for cattle and pigs. For steps where there is a dual role of animal health and food safety, such as lairage, in addition to food safety specific measures there is also a cross reference to the relevant OIE chapters.

The Code Commission reminded Member Countries that they had referred Member Countries' comments on both of the above draft chapters to the *ad hoc* Group on *Salmonella* in pigs and cattle that met in December 2015. The Commission reviewed the report of the *ad hoc* Group and commended the *ad hoc* Group for its substantial work.

The Commission reviewed the two revised draft chapters and made some minor additional amendments. The Commission noted that the definitions for 'feed' and 'feed ingredient' would be moved to the Glossary once these chapters are adopted, as they will appear in more than one *Code* chapter.

The Code Commission noted the *ad hoc* Group recommendations and agreed that Chapter 4.13. "General recommendations on disinfection and disinsection" should be revised to address this important topic in more detail. The Commission reminded Member Countries that this item was on its work programme. In addition, the Commission noted that the definitions for 'disinfection' and 'disinfectants' are not aligned between the *Terrestrial* and *Aquatic Codes* and agreed to discuss this with the Aquatic Animals Commission. The Commission agreed with the *ad hoc* Group recommendation for the deletion of 'wood' bison and agreed to review the use of this term in other relevant chapters in the *Code*.

The Code Commission noted that the *ad hoc* Group had considered all comments on each chapter submitted by Member Countries and then reviewed both chapters, making further amendments, where required and relevant, to ensure alignment between the two chapters. Hence, many of the amendments and much of the restructuring was to improve readability, provide clarification and improve cross-chapter consistency, where appropriate, rather than changing the intended meaning of the recommendations.

The Code Commission emphasised that given the importance of alignment between the two chapters, Member Countries should consider both chapters together when reviewing them.

The Commission reminds Member Countries to refer to the report of the *ad hoc* Group for explanations of amendments and how Member Countries' comments were addressed.

The report of the *ad hoc* Group on *Salmonella* in pigs and cattle is attached as **Annex 40** for Member Countries' information. The amended Chapters 6.X. and 6.Y. are attached as **Annexes 29** and **30** for Member Countries' comments.

EU comment

The EU thanks the OIE and in general supports these two draft new chapters. Comments are inserted in the text of Annexes 28 and 29.

To facilitate the examination of the revised version, due to the extensive changes, the Code Commission provides the revised chapters also in a clean format, which are attached as **Annexes 31** and **32**.

c) Infection with *Trichinella* spp. (Chapter 8.16.)

Comments were received from Argentina, Canada, Mexico, New Zealand, Switzerland and EU.

The Code Commission agreed with a Member Country's comment to amend the number of designated species of *Trichinella* from eight to nine in Article 8.16.1. noting that this was in line with information published by the International Commission on Trichinellosis and an OIE expert.

In response to Member Countries' comments regarding the cross reference to the OIE chapter that appears in the Codex Guidelines for the Control of *Trichinella* spp. in meat of suidae (CAC/GL 86-2015), the Commission was informed that Codex is in the process of amending its Guidelines with the correct chapter number reference.

The Code Commission did not accept a Member Country's comment to delete 'oocytes' from Article 8.16.2. stating that as in other chapters on parasitic diseases oocytes are listed as safe commodities.

In response to a Member Country that proposed substantial amendments to Article 8.16.4., the Code Commission noted that the proposed amendments did not add any new elements to the article. In addition, since this chapter was adopted in 2013, only amendments of substance would be considered at this time.

The Code Commission did not accept a Member Country's comment to add text in Articles 8.16.8. and 8.16.9. regarding a process to inactivate larvae as it was not aware of any studies that have been undertaken or planned to establish the parameters for the inactivation of *Trichinella* larvae in the meat of equids.

The revised Chapter 8.16. is attached as **Annex 12** and will be presented for adoption at the 84th General Session in May 2016.

EU position

The EU supports the adoption of this modified chapter.

d) Infection with *Taenia solium* (Chapter 15.3.)

Comments were received from Canada, Chile, China, Japan, New Zealand, Switzerland, EU and AU-IBAR.

The Code Commission amended point 5 of Article 15.3.2. and reinstated 'oocytes' since, as in other chapters on parasitic diseases, oocytes are listed as safe commodities.

In response to a Member Country's concern about the possible exposure of pigs to human faeces in an establishment, the Code Commission explained that point 1e of Article 15.3.3. is intended to provide for a specific toilet for people working in the pig establishment to prevent exposure of pigs and their environment to human faeces. While noting that the definition of establishment is not limited to the exact building where pigs are reared, the Code Commission deleted the word "rearing" to avoid any misunderstanding.

After reviewing several Member Countries' comments proposing further significant amendments to the structure and wording of Article 15.3.3., the Code Commission considered that the changes proposed would not substantially improve the current text. It also noted that the last sentence of Article 15.3.3. is a stand-alone paragraph that relates to the entire Article 15.3.3., emphasising that the control of infection in humans is critical to the control of this pathogen in pigs.

The Code Commission did not accept one Member Country's suggestion to refer to a preventive programme for detection and treatment of human tapeworm carriers in point 1 of Article 15.3.3. or another Member Country's comment to refer to provision of human sanitation services in point 2 of Article 15.3.3., noting that recommendations to human health programmes are beyond the scope of the *Code*.

The Code Commission did not accept a suggestion from a Member Country to change 'systemic' to 'generalised' infection in point 2 of Article 15.3.2. as it considered systemic to be a more appropriate term in this context.

In response to a Member Country's comment to reinstate 80°C in place of 60°C in Article 15.3.6., the Commission did not agree and noted that heating to a temperature of 56°C has been shown to inactivate cysticerci (Allen R.W. - 1947, *J. Parasitol.*, 33, 331–338.; Hird D.W. & Pullen M.M. (1979). *J. Food Protec*., 42 (1), 58–64.). Another publication states that heating pig meat to 45-50°C for 15 to 20 minutes is sufficient to inactivate *C. cellulosae* (Blaha T. (1989) Applied Veterinary Epidemiology. Elsevier, Amsterdam).

The revised Chapter 15.3. is attached as **Annex 13** and will be presented for adoption at the 84th General Session in May 2016.

EU position

The EU supports the adoption of this modified chapter.

e) Report of the Animal Production Food Safety Working Group (including revision of Chapter 6.1)

Dr Gillian Mylrea informed the Code Commission about activities noted in the report of the November 2015 meeting of the Animal Production Food Safety Working Group.

The Code Commission endorsed the report and agreed with the Working Group recommendation that an introductory chapter in Section 6 'Veterinary public health' of the *Code* would be a useful addition to this section and could provide an overview as well as outlining possible future chapters for this section. The Code Commission agreed to add this to its work programme.

The Commission noted the substantial work undertaken by the Working Group to revise Chapter 6.1. 'Role of Veterinary Services in food safety'. The Commission reviewed the amended chapter and made some additional amendments.

The Commission noted that the Working Group had insufficient time to revise Chapter 6.2. 'Control of biological hazards of animal health and public health importance through ante- and post-mortem meat inspection' during its 2015 meeting, and requested that the Working Group undertake this work at its 2016 meeting.

The November 2015 Report of the Animal Production Food Safety Working Group is attached in **Annex 41** for Member Countries' information.

Since the revised chapter is significantly different from the current chapter, the proposed revision is provided as clean text. The revised Chapter 6.1. is attached as **Annex 32** for Member Countries' comments.

EU comment

The EU in general supports the proposed changes to this chapter. Comments are inserted in the text of Annex 32.

Item 13 Animal welfare

a) Stunning methods (Chapter 7.5. Article 7.5.7. point 2)

Comments were received from: Canada, Costa Rica, Guatemala, Honduras, Mexico, New Zealand, Panama, Switzerland and EU.

The Code Commission noted and supported a request from Member Countries that the diagrams proposed for removal from the chapter be relocated to the OIE website.

The Code Commission considered the rationale for a Member Country's suggestion to replace the word 'checked' with 'verified' in the chapeau text of point 1 insufficient improvement to justify the change.

It did not accept a Member Country's suggestion to add 'restrained' to point 1f, given that restraint is already covered in point 1b.

The Code Commission did not accept a Member Country's suggestion to delete 'of a manual inspection area' and replace 'cervical dislocation' with 'rapid decapitation' in point 1g, given that the text proposed for amendment is only included as an example, rather than a specific requirement.

In response to a Member Country's comment, the Code Commission replaced the word 'instrument' with 'device' in the introductory text to the signs of correct stunning (point 2) for consistency within the chapter.

The Code Commission also made several amendments in response to Member Countries' comments to correct grammar and improve syntax throughout the article.

The Code Commission acknowledged receipt of useful comments and proposals from a Member Country on stunning of animals in general which it referred to the Animal Welfare Working Group for consideration.

The revised point 2 of Article 7.5.7. is attached as **Annex 14** and will be proposed for adoption at the 84th General Session in May 2016.

EU position

The EU thanks the OIE for its work. The EU can support the adoption of this chapter's modified article. We do however have a few comments as indicated in the text of Annex 14 for consideration by the OIE.

b) Report of the *ad hoc* Group on Slaughter of animals: water bath stunning method for poultry (Article 7.5.7. point 3 b)

The Code Commission endorsed the report of the *ad hoc* Group and the amendments to the proposed text by the Animal Welfare Working Group. The report of the *ad hoc* Group is attached as **Annex 42** for Member Countries' information.

The revised point 3 of Article 7.5.7. as amended by the Animal Welfare Working Group is attached as **Annex 33** for Member Countries' comments.

EU comment

The EU thanks the OIE for the considerable amount of work done in revising the article on water bath stunning of poultry which improves this section very much. The proposed new wording adequately reflects the main concerns raised by the EU. We do however have a few comments as indicated in the text of Annex 33 which we ask the OIE to consider in a future revision.

c) Killing of animals for disease control purposes (Chapter 7.6.)

Comments were received from Brazil, Canada, Mexico, New Zealand, Switzerland, USA, EU and AU-IBAR.

The Code Commission moved the content of the footnote to this chapter to the relevant place in the table summarising killing methods to clarify the point the footnote refers to.

Given there is currently no reference to foam as a method for killing animals in this chapter, the Code Commission referred a Member Country's suggestion requesting this addition to the Animal Welfare Working Group to consider whether and how this method of killing could be appropriately included in the chapter.

In response to a Member Country's comment, the Code Commission amended the table entry for poultry to include penetrating and non-penetrating captive bolts as procedures for killing adult poultry.

In response to Member Countries' comments, the Code Commission amended the text in the table on animal welfare concerns with inappropriate application for penetrating captive bolt followed by pithing and bleeding to be consistent in the table entries for horses, cattle, pigs, poultry and sheep.

The Code Commission referred comments from a Member Country questioning the use of non-penetrating captive bolt and penetrating captive bolt in different species to the Animal Welfare Working Group for advice.

In response to Member Countries' request to add killing of dogs to Chapter 7.6., the Code Commission noted that methods for killing of dogs are included in Chapter 7.7. 'Stray dog population control'.

The Code Commission also made several amendments in response to Member Countries' comments to correct grammar and improve syntax throughout the chapter.

The Code Commission did not accept a Member Country's suggestion for editorial change to Article 7.6.14. because the rationale offered was insufficient.

The Code Commission acknowledged receipt of useful comments and proposals from a Member Country on killing of animals for disease control in general, which it referred to the Animal Welfare Working Group for consideration.

The revised articles of Chapter 7.6. are attached as **Annex 15** and will be proposed for adoption at the 84th General Session in May 2016.

EU position

The EU thanks the OIE for its work and for taking into account EU comments. The EU can support the adoption of this chapter's modified articles. We do however have comments as indicated in the text of Annex 15 for the OIE to consider in a future revision.

d) Animal welfare and broiler chicken production systems (Article 7.10.4.)

Comments were received from Canada, Costa Rica, Guatemala, Honduras, Japan, New Zealand, Mexico, Norway, Panama, Switzerland and EU.

Recognising the adoption of the glossary definitions for 'biosecurity' and 'animal health management', the Code Commission amended the headings of point 1a and 1b and deleted the first sentence of these points. The suggestion to replace 'recommendations in the *Terrestrial*

Code' with 'OIE standards' will be revisited when a glossary definition for 'OIE standard' is adopted.

The Code Commission did not accept a Member Country's suggestion (without supporting rationale) to add 'waste' to the list of major routes for disease and pathogen submission.

The Code Commission did not accept a Member Country's suggestion to add 'this should be consistent with lighting needs and the age of the bird' to point 2b because this issue is already addressed in the adopted text for this point.

The Code Commission did not accept a Member Country's suggestion to amend the adopted text concerning ammonia concentration or choice of broiler strain because both points have been debated extensively and the adopted text was accepted by the majority of Member Countries. However, the Spanish and French translations of choice of genetic strain will be reviewed to ensure they accurately reflect the adopted English text.

The Code Commission accepted a Member Country's suggestions (supported by references) to add 'behaviour' to the outcome-based measurables for air quality, and 'behaviour' and 'vocalisation' to the outcome-based measurables for on farm harvesting. It did not accept the suggestion (without supporting rationale) to add 'gait' to the outcome-based measurables for handling and inspection.

The Code Commission did not accept several individual Member Countries' comments to add examples to the outcome-based measurables for the points in this article, because the descriptions of each outcome-based measurable used in this chapter are included in Article 7.10.3.

In response to a Member Country's suggestion, the Code Commission added a sentence on humane killing to point o) on emergency plans as provided in the same point of the adopted beef and dairy cattle chapters.

The Code Commission did not accept a Member Country's suggestion to add more prescriptive text to the period of feed withdrawal recommended in point 2q because there are a number of situational factors to consider in determining this period. It also did not accept a Member Country's suggestion to replace 'harvesting' with 'catching' because the broader *Oxford English Dictionary* definition of harvesting includes catching and is more appropriate in this article.

The revised Article 7.10.4 is attached as **Annex 16** and will be proposed for adoption at the 84th General Session in May 2016.

EU position

The EU thanks the OIE for its work. The EU can support the adoption of this chapter's modified article.

e) Animal welfare and dairy cattle production systems (Chapter 7.11.)

Comments were received from Argentina, Australia, Chile, Costa Rica, Canada, Guatemala, Honduras, Japan, Mexico, Norway, Panama, Switzerland, Thailand, USA, EU and ICFAW.

The Code Commission did not accept a Member Country's suggestion to include a recommendation in Article 7.11.4. point 7 given this Article lists the criteria or measurables used in this chapter, and the point suggested is already addressed in Article 7.11.7. point 13.

In response to Member Countries' request to replace 'animal welfare and health' with 'animal health and welfare' in this chapter, the Code Commission recalled the report of this discussion in September 2015 as follows:

> The Code Commission accepted Member Countries' suggestion to refer to 'animal welfare and animal health' in place of 'animal health and welfare' throughout this chapter since welfare is the primary purpose of the chapter and health is part of welfare.

The Code Commission again decided to use 'animal welfare and health' to emphasise that in the animal welfare chapters of the *Code* the recommendations provided are directed first and foremost at animal welfare.

Throughout the chapter, the Code Commission made editorial changes in response to Member Countries' comments to correct grammar and improve syntax.

The Code Commission did not accept a Member Country's suggestion to duplicate the reference to bedding in Article 7.11.6. point 1b.

The Code Commission did not accept Member Countries' request to amend the requirement in Article 7.11.6. point 5 for at least one space per cow where individual spaces are provided for cows to rest, and drew Member Countries' attention to the supporting explanation to this text provided in the report of the September 2015 Code Commission meeting:

> The Code Commission did not accept a Member Country's repeated comment suggesting the deletion of the need for individual lying spaces since this is a consequence of an outcome based measure requiring that 'all cattle should have sufficient space to lie down at the same time specifically recommended by the AWWG, as noted in the following excerpt from the AWWG report:
>
> 'Prof. Fraser noted in relation to a Member Country comment on the rationale to modify the text on space requirements for housed dairy cattle that the recommendation is based on essential housing design. He explained that in this case the need for space to lie could be understood as an outcome measure which directly impacts on animal behaviour.'

To further emphasise this outcome-based measure (and in response to Member Countries' suggestion), the Code Commission included use of lying areas in the examples of outcome-based measurables for point 5 of this article."

The Code Commission accepted Member Countries' suggestion to add 'altered lying time' to the description of outcome-based measurables for Article 7.11.6. point 5, and rearranged the wording of this clause to correct grammar and improve syntax.

Recognising the adoption of the glossary definitions for 'biosecurity' and 'animal health management' the Code Commission amended the headings of Article 7.11.7. point 1a and 1b and deleted the first sentence of point 1a.

In response to Member Countries' comments, the Code Commission revised the wording of Article 7.11.7. point 9 to emphasise that calves should receive sufficient colostrum to provide adequate passive immunity. In the absence of scientific consensus, the Code Commission decided not to include a specific recommendation on the optimal duration of colostrum feeding.

In response to Member Countries' comments, the Code Commission amended the second paragraph of Article 7.11.7. point 11 to indicate that individual calf housing is a way to prevent disease in very young calves, but should not be prolonged unnecessarily.

The Code Commission did not accept Member Countries' suggested amendments to the text of Article 7.11.7. point 13 on painful husbandry procedures that is taken directly from the adopted text in the beef cattle chapter and noted that these procedures are more common in beef cattle than dairy cattle.

The Code Commission did not include additional text on the need for access to an emergency power supply in Article 7.11.6. point 16, given this is already addressed with the cross reference to point 7 of Article 7.11.6.

The revised Chapter 7.11. is attached as **Annex 17** and will be proposed for adoption at the 84th General Session in May 2016.

EU position

The EU thanks the OIE for its work and for taking some aspects of the EU comments into account. The EU can support the adoption of this modified chapter but does have one comment inserted in the text of Annex 17 for consideration by the OIE in a future revision.

f) Draft new chapter on the welfare of working equids

Comments were received from Australia, Canada, Chile, China, Japan, Mexico, New Zealand, Norway, Thailand, Switzerland, USA, EU, AU-IBAR and ICFAW.

In response to a Member Country's comment, the Code Commission noted that horses and other species used for production of biopharmaceutical products are included in the scope of Chapter 7.8. (Article 7.8.2.), and added this group of horses to those listed outside the scope of the chapter in Article 7.X.2.

Throughout the chapter, the Code Commission made editorial changes in response to Member Countries' comments to remove unnecessary words, correct grammar and punctuation, and improve syntax.

Member Countries' suggestions without a supporting or obvious rationale were not accepted as stated previously.

In response to a Member Country's comment, the Code Commission decided to use the order 'horses, donkeys and mules' consistently throughout the chapter.

The Code Commission reordered the sentences in the opening paragraph of the introduction in response to Member Countries' suggestion to improve the logical flow of the text. It considered a Member Country's suggestion to add 'gender equity' to the opening sentence to be outside the scope of OIE standards.

In response to Member Countries' comments, the Code Commission amended the last paragraph of the introduction to more neutral non-judgemental language, and to improve syntax.

The Code Commission considered unnecessary a Member Country's suggestion to expand the last paragraph of the introduction.

In response to Member Countries' comments seeking to add horses used for various specific leisure pursuits to the classes of horse excluded from the scope of this chapter, the Code Commission replaced the words 'leisure riding' with 'leisure activities' in the sentence of exclusions.

The Code Commission expanded Article 7.X.3. point 1 on the responsibilities of the Veterinary Authority in response to comments from a Member Country.

The Code Commission received a wide range of suggestions concerning the reference to the 'five freedoms' in Article 7.X.3. point 4 and, after considering them all, decided to include a cross reference to the five freedoms listed in Article 7.1.2. to ensure consistency within the *Terrestrial Code*.

In response to comments, the Code Commission decided the opening paragraph of Article 7.X.4. was unnecessary and deleted it.

The Code Commission did not accept a Member Country's suggestion to add 'agitation' to the list of animal welfare problems included in Article 7.X.4. point 1 because agitation is an indicator rather than a condition.

In response to a Member Country's request to replace the adjective 'equine' with the noun 'equids' in the opening sentence of Article 7.X.4. point 1, the Code Commission noted that it is the adjective that is required in this sentence.

In response to Member Countries' comments, the Code Commission added 'spinal' to the areas of the body where the various behaviours listed might indicate pain.

In response to a Member Country's comment, the Code Commission added the qualifier 'unusual' to the avoidance of humans that may be a behaviour indicating fear or anxiety.

The Code Commission considered a Member Country's suggestion to add 'pacing' to the locomotive stereotypies to be unnecessary and a source of potential confusion with the normal gait of pacers.

In response to Member Countries' comments, the Code Commission added a sentence on the usefulness of necropsy for determining the cause of death to Article 7.X.4. point 3 (mortality). It also accepted a Member Country's suggestion to reinstate 'emaciation' as one of the attributes of physical appearance that may indicate compromised welfare in Article 7.X.4. point 4.

The Code Commission did not accept Member Countries' suggestion to include a recommendation in Article 7.X.4. point 4 given this Article lists the criteria or measurables used in the chapter. It also declined Member Countries' suggestions to add an unnecessary list of specific types of wounds or injuries, and clinical signs of disease to this point. Similarly, the Code Commission did not accept a Member Country's suggestion to add 'abnormal or lack of defaecation' to this point on body condition and physical appearance.

In response to Member Countries' comments, the Code Commission added the words 'or apathetic' to the indicator of aversive responses to fitting of equipment and loads in Article 7.X.4. point 5.

The Code Commission amended Article 7.X.4. point 7 in response to Member Countries' comments and moved the text on scoring systems from the indicators to the chapeau text of this article.

The Code Commission expanded the explanatory text of Article 7.X.4. point 8 in response to Member Countries' comments.

In response to many different comments on Article 7.X.6. point 1, the Code Commission reordered and reworded this point to improve clarity and syntax. It did not accept Member Countries' suggestions to qualify slaughter, because the chapter on 'slaughter of animals' refers to human consumption, and slaughter conducted in accordance with the *Code* is humane.

The Code Commission did not accept a Member Country's suggestion to add text to this point on protecting horses from predators since this is addressed in Article 7.X.7. point 3.

The Code Commission did not accept Member Countries' suggestions to give more specific parameters on the volume of water working equids need given the very large impact the environment in which equids work has on this requirement.

The Code Commission amended and added to the recommendations to prevent heat stress and provide protection from cold weather in response to Member Countries' suggestions.

The Code Commission did not accept Member Countries' suggestions to add new points to Article 7.X.7. on housing and tethering, and protection from vectors since the suggested points are addressed elsewhere in the chapter.

Recognising the adoption of the glossary definitions for 'biosecurity' and 'animal health management' the Code Commission amended the headings of point Article 7.X.8. points 1 and 2 and deleted the first sentence of both points.

The Code Commission did not accept a Member Country's suggestion to add 'including insects' to Article 7.X.8. point 1b since insects are included in the glossary definition of vectors.

The Code Commission did not accept Member Countries' suggestion to add two specific examples in brackets to morbidity in the list of outcome-based measurables for Article 7.X.8. point 2 given the very long list of other examples that might also be considered if the suggested two were added.

The Code Commission did not accept the Member Countries' suggestion to add another paragraph to Article 7.X.9. on painful husbandry procedures, given all the points in the suggested new paragraph are covered more succinctly in the opening sentence of this article.

The Code Commission did not accept a Member Country's suggestion to delete 'lack of resting periods' from the paragraph describing poor management practices in Article 7.X.9. since the provision of resting periods may not be fully addressed by avoiding an excessive number of working hours.

The Code Commission considered Member Countries' suggestion to add clipping of hair to a non-exhaustive list of poor management practices to be unnecessary detail. Similarly the Code Commission considered a Member Country's suggestion that education strategies should take account of local cultures, a point that can be left implicit in the *Code* as the recommendations will in any case be applied by national Veterinary Services familiar with their own cultural situation.

In response to Member Countries' comments, the Code Commission revised the text on tethering and hobbling, and added the point that working equids should not be kept confined indoors for long periods.

In response to a Member Country's comment, the Code Commission deleted the sixth paragraph of Article 7.X.12. since this is addressed in Article 7.X.6. It did not accept a Member Country's suggestion to reorder and rephrase Article 7.X.12. since it considered the alternative offered to be no better than the current text.

The Code Commission considered a Member Country's suggestion to add text requiring the necessary knowledge and skills for persons hoof trimming and shoeing working equids in Article 7.X.13. to be proven as inconsistent with, and beyond the established practice for, recommendations such as this in the *Code*.

The Code Commission did not accept Member Countries' suggestion to change the measurable 'body condition' to 'foot condition' in this article, since the description of body condition in Article 7.X.4. includes 'feet or limb abnormalities'.

The Code Commission considered a Member Country's suggestion to include a paragraph on carts in Article 7.X.13. to be beyond the scope of this chapter.

The revised Chapter 7.X. is attached as **Annex 18** and will be proposed for adoption at the 84th General Session in May 2016.

EU position

The EU thanks the OIE for its work and for taking several EU comments into account. The EU can support the adoption of this chapter. We do however have a several comments as indicated in the text of Annex 18 which we ask the OIE to consider in a future revision.

Item 14 Vector-borne diseases

a) Infection with bluetongue virus (Chapter 8.3.)

Comments were received from New Zealand, Switzerland, Thailand, USA and EU.

The Code Commission acknowledged Member Countries' comments supporting the work done on this chapter and encouraging its adoption.

In response to a Member Country's comment questioning the validity of seasonal freedom, given the evidence of ongoing climate change, the Code Commission acknowledged the concern but considered that the concept should remain so long as it remains applicable and relevant in at least some Member Countries.

The Code Commission referred Member Countries' questions concerning the exclusion of nonpathogenic serotypes of bluetongue virus and live vaccine strains of bluetongue virus to the Biological Standards Commission for advice.

In response to a comment from Member Countries questioning whether the title of Article 8.3.4. should include 'countries seasonally free from bluetongue', the Code Commission agreed that a zone could be an entire country, but proposed no change to the title at this time.

In response to Member Countries' comments, the Code Commission made minor amendments to Articles 8.3.14. and 8.3.16. point 4 to improve clarity.

The revised Chapter 8.3. is attached as **Annex19** and will be proposed for adoption at the 84th General Session in May 2016.

EU position

The EU thanks the OIE and supports the adoption of this modified chapter.

b) Infection with epizootic hemorrhagic disease virus (Chapter 8.7.)

Comments were received from New Zealand, Switzerland, Thailand and EU.

In response to a Member Country's comment questioning the validity of seasonal freedom, given the evidence of ongoing climate change, the Code Commission acknowledged the concern but considered that the concept should remain so long as it remains applicable and relevant in at least some Member Countries.

The Code Commission accepted Member Countries suggestion to replace 'whole country' with 'entire country' throughout the chapter to be consistent with the other disease chapters.

In response to a comment from Member Countries questioning whether the titles of Articles 8.7.4., 8.7.7., 8.7.9., and 8.7.11. should include countries seasonally free from epizootic hemorrhagic disease, the Code Commission agreed that a zone could be an entire country, but proposed no change to the titles at this time.

The revised Chapter 8.7. is attached as **Annex 20** and will be proposed for adoption at the 84th General Session in May 2016.

EU position

The EU thanks the OIE and supports the adoption of this modified chapter.

c) Infection with Rift Valley fever virus (Chapter 8.14.)

Comments were received from New Zealand, Switzerland, Thailand and EU.

The Code Commission acknowledged Member Countries comments supporting the work done on this chapter and encouraging its adoption.

In response to a Member Country's comment questioning the validity of seasonal freedom, given the evidence of ongoing climate change, the Code Commission noted there are no provisions for seasonal freedom in this chapter.

There were no further changes proposed for this chapter.

The revised chapter is attached as **Annex 21** and will be proposed for adoption at the 84th General Session in May 2016.

EU position

The EU supports the adoption of this modified chapter.

Item 15 Infection with foot and mouth disease virus (Chapter 8.8.)

Comments were received from Argentina, Australia, Brazil, Chinese Taipei, Japan, Mexico, New Zealand, Switzerland, EU and AU-IBAR.

The Code Commission reviewed all comments from Member Countries, advice from the Scientific Commission and the *ad hoc* Group, and amended the text accordingly.

Two major issues remain to be addressed by an *ad hoc* Group: movement of vaccinated animals to free zones without vaccination, and waiting periods to regain free status depending on the policy applied. The Code Commission expects to address these at its September meeting.

In the interim, Member Countries' comments are sought on a new article establishing compartments free from FMD with vaccination for consideration at the next meeting of the *ad hoc* Group, and the September meetings of the Scientific and Code Commissions.

The proposed new Article 8.8.4.bis along with the Article 8.8.4. and the relevant extract from the *ad hoc* Group report are attached as **Annex 34** for Member Country comments by **31 May 2016.**

EU comment

The EU can in general support the proposed changes to these articles. Comments are inserted in the text of Annex 34.

Item 16 Infection with *Mycobacterium tuberculosis* complex (draft new Chapter 8.X.)

Comments were received from Australia, Belize, Canada, Chile, Japan, New Zealand, South Africa, Switzerland, USA, EU and AU-IBAR.

The Code Commission reviewed all comments from Member Countries and advice from the Scientific Commission, and amended the text accordingly.

In response to a Member Country's comment that it was unable to locate the *ad hoc* Group report that explains the background to the development of this revised chapter, Headquarters advised that work is underway to make *ad hoc* Group's reports easier to search and find on the OIE website. In the interim the link to the report of the *ad hoc* Group on 'Infection with *Mycobacterium tuberculosis* complex' is: http://www.oie.int/fileadmin/Home/eng/Internationa_Standard_Setting/docs/pdf/SCAD/A_SCAD_Sept2014.pdf.

In response to questions from a Member Country on the scope of the revised chapter, the Code Commission advised that the decision to expand the scope of this chapter was approved by the World Assembly of Delegates, and that the purpose of including multiple species of *Mycobacteria* within the scope is to provide risk management measures for all species of the complex for the given host species. The Code Commission recalled that elephants have been found not to be significant in the epidemiology of *M. tuberculosis* complex, and that risk management of tuberculosis of apes is dealt with in Chapter 6.11.

The Code Commission referred Member Countries' requests to update diagnostic methods and ensure appropriate consistency between the Terrestrial *Code* and *Manual* to the Biological Standards Commission. It also noted that the *Manual* aims to include methods for all recognised susceptible host species of a particular agent, whereas the scope of disease-specific chapters of the *Code* is limited to the epidemiologically significant host species.

The Code Commission agreed with Member Countries' suggestion to replace 'this chapter' with 'the *Terrestrial Code*' in the opening paragraph of Article 8.X.1. and agreed with Member Countries' suggestion to consider development of further specific risk management articles for goats, once expert advice has been received.

After reviewing the *ad hoc* Group report and consultation with the Scientific Commission, the Code Commission concluded it had currently insufficient information to include New World camelids in the list of susceptible species. It asked Headquarters and both the Biological Standards Commission and the Scientific Commission to re-evaluate the significance of infection with *M. tuberculosis* complex in New World camelids along with the available diagnostic and risk management tools to determine whether they should be included in the case definition or not.

The Code Commission considered a Member Country's suggestion to add the words 'or suspicion' to the second definition of the occurrence of infection with *M.tuberculosis* complex in Article 8.X.1. to be unnecessary additional words.

In answer to Member Countries' comment, the Code Commission advised that infection found in the African buffalo (*Syncerus caffer*) or other species not included in the list of susceptible species would not impact on the assessment of historical freedom from *M. tuberculosis* complex in bovids.

In response to Member Countries' comments suggesting that the provisions in Article 8.X.4. are too prescriptive, the Code Commission noted that 'regular testing of all herds has been in place for at least 3 years' is determined by the Veterinary Authority of the Member Country. It does not mean that all herds have to be tested every year for three years, or that all herds should meet the requirements for free herds as described in Article 8.X.6. The Code Commission made minor editorial amendments to Article 8.X.4. in response to a Member Country's comments to improve clarity.

The Code Commission did not accept a Member Country's suggestion to extend the required period of surveillance in Articles 8.X.4. and 8.X.5. point 2c to five years because the combination of the requirements in points b and c does indeed result in at least five years of surveillance.

Article 8.X.4. point 3 was rearranged in response to a Member Country's suggestions to improve clarity.

The Code Commission did not accept a Member Country's suggestions to replace 'herd' with 'population' in articles for freedom in each animal category because 'herd' as defined in the glossary already addresses this comment.

The Code Commission did not accept a Member Country's suggestion to replace 'herd' with 'compartment' in Article 8.X.6. because the *ad hoc* Group supported the earlier decision to refer to herd rather than compartment on the grounds that management of a herd is sufficient to assure freedom from infection with *M. tuberculosis* complex with the current conditions, thus ensuring safe trade.

The Code Commission also did not accept a Member Country's suggestion to include provisions for circumstances where human cases of *M. tuberculosis* complex are detected since this is beyond the scope of the chapter, and the possibility of infection from humans is sufficiently accounted for by the species included in the definition of the *M. tuberculosis* complex.

The Code Commission introduced a new point c to Article 8.X.6. based on a Member Country's suggestion to address circumstances where there is a known wildlife reservoir of *M. tuberculosis* complex.

In response to Member Countries' comments requesting articles on herd and country freedom in goats and New World camelids, the Code Commission requested Headquarters to seek information from countries with successful programmes on herd, rather than country, certification of freedom from *M. tuberculosis* complex, which would enable the development of appropriate articles.

In answer to Member Countries' comments, the Code Commission changed the period of isolation from 90 days to six months in Article 8.X.7. point c to be consistent with the recommendation for herd freedom. Several editorial amendments were made throughout Article 8.X.7. to correct grammar and improve clarity in response to a Member Country's suggestions. Other suggestions from a Member Country to include additional unnecessary words, or delete words essential to avoid ambiguity, were not accepted.

The Code Commission modified Article 8.X.8. in response to Member Countries' comments by adding the words 'since birth or for at least 6 months prior to shipment' to Article 8.X.8. point 3 (which aligns with the herd freedom requirements). It also added a new point 3b providing for testing of goats to be exported, based on the bovid requirements and field evidence that tuberculin test performance in goats is similar to that in bovids for individual testing.

In response to Member Countries' comments the Code Commission made several editorial amendments to Article 8.X.10. to align with amendments made in Articles 8.X.6. and 7.

It did not accept a Member Country's suggestion to add the words 'to be transported directly' to the title of Article 8.X.9. since the title clearly excludes bovids or cervids imported for rearing or breeding, and infection with *M. tuberculosis* complex is not as contagious as diseases such as foot and mouth disease (where the equivalent Article does include that phrase).

In response to a Member Country's comment, the Code Commission modified Article 8.X.10. point 2 to reflect the risk management options provided in Article 8.X.7. for breeding animals, and added a cross reference to Article 4.6.2. in Article 8.X.10. point 2a.

The Code Commission aligned Article 8.X.11. point 2b to the corresponding points in Articles 8.X.6. and 8.X.10.

The Code Commission accepted Member Countries' suggestion to include a new point addressing semen used for fertilisation in Article 8.X.12. point 1.

It did not accept a Member Country's suggestion to require absence of clinical signs of infection with *M. tuberculosis* complex on the day of collection because of the nonspecific clinical signs of infection with *M. tuberculosis* complex and the very common absence of clinical signs of infection with *M. tuberculosis* complex. For the same reasons, the Code Commission did not accept the suggestion to include a requirement for absence of clinical signs in Article 8.X.13.

Member Countries' observations that compliance with the provisions of Article 8.X.14. point 1 requires that goats are kept in a herd that has been subjected to a testing regime, were referred to the Biological Standards Commission and the Scientific Commission to support further consideration of the development of such a testing regime to demonstrate herd freedom from infection with *M. tuberculosis* complex in goats.

The revised draft Chapter 8.X. is attached as **Annex 35** for Member Countries' comments.

EU comment

The EU thanks the OIE and in general supports the proposed changes to this chapter. Comments are inserted in the text of Annex 35.

Item 17 Infection with avian influenza virus (Chapter 10.4.)

Comments were received from the USA and the IEC.

The Code Commission did not accept a Member Country's suggestion to modify the definition of '*poultry*' in point 3 of Article 10.4.1. The Code Commission reminded Member Countries that it has been demonstrated that backyard poultry as well as fighting cocks have major epidemiological significance in some regions. The Code Commission also cautioned that modification of a term defined in the glossary might affect various other parts of the *Code*. Further, the definition of poultry has evolved following extensive debate amongst Member Countries and Specialist Commissions.

The Code Commission did not accept a Member Country's suggestion to replace '*disinfection*' with '*treatment for virus inactivation*' in point 1 of Article 10.4.3., noting that '*disinfection*' is included in the definition of '*stamping-out policy*.' Furthermore, referring to the definition of '*disinfection*', the Code Commission reconfirmed that the effect proposed by the Member Country is well covered by '*disinfection*.'

Disinfection

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

The Code Commission did not accept a Member Country's suggestion to create an additional point in Article 10.4.3. to the effect that isolated detections of avian influenza in certain categories of poultry are not to affect international trade, because backyard poultry are of major epidemiological significance in some regions.

The Code Commission was informed that the result of a scientific study needed to update the table for inactivation of avian influenza virus will be available before its September 2016 meeting. As stated at the meeting of September 2015, the Code Commission will review Chapter 10.4. when such data and substantive conclusions from the generic work on vaccination, zoning and outbreak management become available.

Item 18 Infection with lumpy skin disease virus (Chapter 11.11.)

The Code Commission reviewed a draft new chapter prepared by an *ad hoc* Group, reviewed by the Scientific Commission and proposed to replace the outdated current chapter. The Code Commission made some amendments and edited it to align with established *Code* style and format.

The proposed new chapter is attached as **Annex 36** for Member Countries' comments.

EU comment

The EU in general supports the proposed changes to this chapter. Comments are inserted in the text of Annex 36.

Item 19 Infection with *Burkholderia mallei* (Glanders) (Chapter 12.10.)

Comments were received from Australia, Canada, Chile, New Zealand, Singapore, Switzerland, South Africa, Uruguay, USA, EU and AU-IBAR.

The Code Commission addressed all Member Countries' comments and advice from the Scientific Commission, and amended the text accordingly. However, the experts providing advice on the requirements for surveillance (Article 12.10.8.) and differential diagnosis for the corresponding *Manual* chapter are still working on those tasks.

Given the crucial importance of both points to the chapter as a whole, the Code Commission decided to keep its review of the latest draft of this chapter on hold until that advice is available. It is now expected review of the chapter incorporating the currently outstanding expert advice will be completed in September, and that a revised draft of the chapter will be circulated for Member Countries' comments in the report of the September Code Commission meeting.

Item 20 Infection with peste des petits ruminants virus (Article 14.7.21.)

Comments were received from Japan.

In response to a Member Country's comment, the Code Commission corrected a mistake in the chapeau text of Article 14.7.21.

The revised Article 14.7.21. is attached as **Annex 22** and will be proposed for adoption at the 84th General Session in May 2016.

EU position

The EU supports the adoption of this modified chapter.

Item 21 Infection with African swine fever virus (Chapter 15.1.)

Comments were received from Australia, Argentina, Canada, China, Japan, Korea, New Zealand, Norway, Singapore, Switzerland, USA, EU and AU-IBAR.

The Code Commission reviewed all comments from Member Countries and advice from the Scientific Commission, and amended the text accordingly.

In response to a Member Country's suggestion, the Code Commission amended Article 15.1.1. to clarify that the only arthropods known to be capable of transmitting ASFV are ticks of genus *Ornithodoros*.

The Code Commission did not accept a Member Country's comment to differentiate '*captive wild* pigs', as defined in the glossary, from 'domestic pigs' throughout the chapter because captive wild pigs may play a significant role in the epidemiology of ASF. The Code Commission urged Member Countries to refer to the glossary for definitions when words are italicised.

The Code Commission simplified the language of point 2 of the definition of Article 15.1.1., and in response to Member Countries' comments, included reference to clinical signs of a suid from which samples are taken in this point.

In response to a Member Country's comment, the Code Commission replaced '*outbreak*' with '*case*' in point 3 of Article 15.1.1. considering the definitions of these two terms and the importance of the safeguards provided by this chapter.

In response to Member Countries' comments, the Code Commission deleted the paragraph warning against the imposition of import bans in response to a notification of infection with ASFV in wild or feral or African wild suids and created a new point 8 in Article 15.1.2. indicating that commodities can be traded safely according to the relevant articles of this chapter. The Code Commission considered that the consequence of a notification of infection with ASFV in wild and feral pigs or African wild suids would be more appropriate to be included in general criteria for determination of the ASF status.

In response to a Member Country's suggestion and noting the importance of feral suids, the Code Commission amended point 4 of Article 15.1.2. to create consistency throughout the chapter.

The Code Commission did not agree with a Member Country's suggestion not to apply point 5 of Article 15.1.2. to countries with historically free status. The Code Commission noted that 'appropriate surveillance' does not necessarily mean 'active surveillance' or 'pathogen-specific surveillance'.

In response to a Member Countries' comment, the Code Commission amended the Article numbers referred to in point 5 of Article 15.1.2., noting that Article 15.1.26. is not relevant to the population concerned in point 5.

The Code Commission did not agree with a Member Country's suggestion to delete from points 1 and 5 of Article 15.1.2. the word 'appropriate' qualifying surveillance programme, noting that this is to allow flexibility of the surveillance programme depending on the situation. The Code Commission reminded a commenting Member Country that the present tense is used when listing criteria, and not 'should'.

The Code Commission agreed with Member Countries' comments that the defined term 'risk' is not appropriate in the context and replaced it with 'likelihood' in points 6 and 7 of Article 15.1.2.

In response to Member Countries' comments, the Code Commission restructured Article 15.1.3. creating three status for historical freedom, freedom in all suids, and freedom in domestic and captive wild pigs.

The Code Commission acknowledged Member Countries' comments seeking specific criteria for a compartment free from ASF in Article 15.1.3.bis, and reviewed the advice from the Scientific Commission that an embedded fence and double fence to ensure no contact with external pig populations would be required and that *Ornithodoros* ticks would be unlikely to move a distance of more than one metre. The Code Commission requested Headquarters to forward this issue to experts to consider if it is possible to draft an Article which suits all situations.

The Code Commission considered unnecessary a suggestion from Member Countries to include a reference to Chapter 4.3. in Article 15.1.3ter. The Code Commission also noted that Chapter 4.3. is currently under revision.

The Code Commission accepted a Member Countries' suggestion to replace the word 'can' with 'may' in the first paragraph of Article 15.1.3ter.

In response to a Member Countries' comment, the Code Commission clarified that a country may self-declare a containment zone for a disease that is not subject to official OIE recognition of disease status.

In response to Member Countries' comments, the Code Commission amended Article 15.1.4. to clarify that because of the stability of ASFV the three months period does not start until disinfection has been completed.

The Code Commission did not agree with Member Countries' suggestions to limit the situations when sentinel animals are required in point 1 of Article 15.1.4. The Code Commission kept the existing text, considering the stability of ASFV, the possibility of ineffective disinfection and its serious consequences, reminding Member Countries that such a provision is created to facilitate early recovery of free status.

In response to a Member Country's suggestion, the Code Commission added a new point 3 to Article 15.1.5. for precautions to avoid contamination.

In response to Member Countries' comments on the title of Article 15.1.6., the Code Commission explained that in cases where 'country or zone infected with [pathogen]' is not defined in the chapter, 'country or zone not free from' is used to express the disease status of countries or zones that do not comply with the requirements for freedom.

The Code Commission did not accept a Member Country's suggestion on point 2 of Article 15.1.6., recalling the opinion of the *ad hoc* Group that tests are not necessary more than once during the quarantine period.

The Code Commission did not accept a Member Country's suggestion to refer to Chapter 4.4. in point 2a of Article 15.1.6., as such a reference is unnecessary.

The Code Commission did not modify the isolation period of point 2b of Article 15.1.6., noting that the current 30 days is double the incubation period, which is consistent with other chapters and current risk management procedures.

The Code Commission did not accept a Member Country's suggestion to replace 'donor males' with 'donor boars', noting that the word 'boar' has different meanings between regions. The Code Commission noted again that throughout the *Code* when revising articles dealing with semen or embryos it would consistently use the terms 'donor males' and 'donor females', whatever the species.

In response to a Member Country's comment, the Code Commission amended point 1a of Article 15.1.9. for consistency with Article 15.1.3.

The Code Commission did not accept a Member Country's suggestion to test donor males, as such an additional requirement is considered unnecessary in terms of risk mitigation and impractical for pig semen production.

The Code Commission clarified that the publication provided by a Member Country to support its request to reinstate the testing regime in Article 15.1.9. was found to be incorrect and the document cited in the said publication does not exist. After thorough review of the scientific literature and consultation with the Scientific Commission, the Code Commission did not accept the Member Country's comment, as the putative risk of transmission of ASFV through semen could be mitigated by point a and point b of Article 15.1.9.

In response to Member Countries' comments that the IETS classifies ASF as Category 4 for embryo production (Article 4.7.14.), the Code Commission amended point 1a of Article 15.1.9.

In response to Member Countries' comments, the Code Commission amended Article 15.1.12bis. as follows:

– in point 2a the surveillance requirement was clarified and reinforced;

– point 2b was deleted, since a test at the slaughterhouse alone would not provide the same guarantee as point 2a for meat derived from animals of a herd with unknown disease status;

– point 1 and point 2 were reversed according to the sequence of procedures;

– point 3 was added for precautions to avoid contamination.

In response to Member Countries' concerns and to be consistent with Article 15.1.12., the Code Commission modified Article 15.1.13. to only describe conditions of importation of fresh meat of wild and feral pigs from countries and zones free from ASF in the wild population. The Code Commission also reiterated that, as noted in the User's Guide, the absence of an Article or import conditions on any given commodity does not mean that trade in that commodity cannot be conducted safely, or that Member Countries cannot apply appropriate measures.

In response to a Member Country's suggestion, the Code Commission replaced 'examination centre' with 'examination facility' in point 1 of Article 15.1.13.

The Code Commission replaced 'establishment' with 'facility' in point 1b of Article 15.1.14. to avoid confusion with the defined term '*establishment*'. The same rewording was also made in Article 15.1.16., Article 15.1.17. and Article 15.1.17bis.

In response to a Member Country's comment, the Code Commission added 'from suids' to the title of Article 15.1.17bis. and replaced 'domestic and *captive wild* pigs' with 'suids' in point 1. The Code Commission did not accept a Member Country's suggestion to replace 'skin' with 'hide', as the former has a more general meaning.

The Code Commission deleted 'domestic or *captive wild*' in point 1 of Article 15.1.17ter. as such qualification is unnecessary.

In response to a Member Country's suggestion, the Code Commission created new point 3 to Article 15.1.18. to accommodate any other equivalent treatment.

In response to a Member Country's comment with a reference to a supporting scientific paper*, the Code Commission deleted '(under study)' from the title and amended the word order in the text for consistency in Article 15.1.21ter.

*Turner, C and Williams, SM (1999). Laboratory-scale inactivation of African swine fever virus and swine vesicular disease virus in pig slurry. *Journal of Applied Microbiology*. Volume 87, Issue 1, pages 148–157.

The Code Commission did not accept a Member Country's request to reinstate the bullet point for the role of semen in Article 15.1.22., for the same reason as explained above.

In response to a Member Countries' comment, the Code Commission deleted 'apparently healthy' from the sixth bullet point of Article 15.1.22. as such words are unnecessary to define a 'carrier'.

The Code Commission did not accept a Member Country's suggestion to add ticks to point 1 of Article 15.1.24 as ticks are already listed as a risk factor in the paragraphs following this point.

The Code Commission did not accept a Member Countries' suggestion to change the order of Article 15.1.26. and Article 15.1.27., noting the convention of the *Code* chapters which places the surveillance of vectors after the surveillance of animals.

In response to a Member Countries' suggestion, the Code Commission amended point 3 of Article 15.1.26. to include a reference to awareness campaigns.

In response to a Member Country's comment, the Code Commission slightly modified Article 15.1.27. for clarification.

The Code Commission also accepted a Member Country's suggestion, with a reference to a supporting scientific paper, to add 'CO_2 flagging' as a sampling method for vectors in Article 15.1.27.

The revised Chapter 15.1. is attached as **Annex 37** for Member Countries' comments.

EU comment

The EU thanks the OIE and in general supports the proposed changes to this chapter. Comments are inserted in the text of Annex 37.

Item 22 Draft new chapter on infection with porcine reproductive and respiratory syndrome virus (Chapter 15.X.)

Comments were received from Argentina, Australia, Canada, Chile, Chinese Taipei, Japan, New Zealand, Norway, South Africa, Switzerland, USA, EU and AU-IBAR.

The Code Commission reviewed all comments from Member Countries and advice from the *ad hoc* Group and the Scientific Commission, and amended the text accordingly. Throughout the chapter amendments were made to simplify the text, improve clarity, and align with established *Code* format.

In response to a Member Country's comment seeking more information on the description of the disease, the Code Commission noted that this information is included in the corresponding *Manual* chapter updated in May 2015.

The Code Commission acknowledged a Member Country's comment about the extent of the change in pH in meat during processing, but noted that any putative risk linked with meat coming from infected animals was managed by the removal of lymph nodes of head and viscera.

In response to a Member Country's comment that the scope of the chapter should include all pigs, the Code Commission agreed with the Scientific Commission that the scope should be confined to domestic and captive wild pigs, because the prevalence of infection with PRRSV in wild pigs is negligible, there is no evidence that PRRSV can be maintained in wild or feral pig populations, and there is no evidence that wild pigs play a role in the epidemiology of the disease. Infection of wild pigs is usually a consequence of a spill over of infection from domestic pigs. It also noted that captive wild pigs are defined by their phenotype rather than their source, and that they are usually reared on farms, which justifies their inclusion in the scope of the chapter.

The Code Commission amended and reordered the definitions of infection with PRRSV in response to Member Countries' comments, advice from the *ad hoc* Group and the Scientific Commission and to align with established *Code* format. In doing so, it also noted:

– the primary cause of PRRS is PRRSV, so notification of detection of the virus is required to apply effective risk management;

– infection with PRRSV includes all PRRSV types and effective risk management of infection cannot be limited to pigs expressing clinical signs;

– Article15.X.1. provides four options to define infection according to common principles applied throughout the *Code*, whether DIVA tests are available or not;

– when investigating infection in a vaccinated herd, serology is of limited value; other methods of virus detection are needed.

In response to Member Countries' comments, the Code Commission replaced the last paragraph of Article 15.X.1. with text indicating that commodities from domestic and captive wild pigs (as defined in the glossary) can be traded safely according to the provisions of this chapter, in the event that PRRSV is detected in wild or feral pigs.

In response to a Member Country's comment requesting that this chapter should only be adopted after the corresponding *Manual* chapter has been reviewed, the Code Commission noted that the *Manual* chapter has already been reviewed and was adopted in 2015.

On the basis of the extensive evaluation of the published literature undertaken by the *ad hoc* Group and the Scientific Commission, the Code Commission agreed that there is no scientific justification to remove hides, skins and trophies, meat products (as defined in the glossary), or meat and bone meal from the list of proposed safe commodities. On the same basis the Code Commission added gelatine to the list.

Blood by-products were deleted from the list since they are included in the glossary definition of meat products.

The Code Commission noted that a Member Country's request for a glossary definition of casings has been addressed.

In response to Member Countries' comments, a new point 6 was added to Article 15.X.3. to distinguish the different provisions for inactivated and modified live virus vaccines.

In response to Member Countries' comments and advice from the Scientific Commission, the Code Commission deleted the option of emergency vaccination and added the option of slaughter of infected animals to Article 15.X.4.

In response to a Member Country's suggestion that free status should only be regained six months after a stamping out policy is applied, both the Scientific and Code Commissions agreed that three months is sufficient given that no infected animals remain alive after stamping out.

In response to Member Countries' suggestion that pigs exported from countries, zones or compartments free from PRRS should have been resident in that country, zone or compartment since birth or at least for six months, both the Scientific Commission and the Code Commission noted that any animals imported to a free country, zone or compartment according to the provisions of the *Code* will be free from PRRS, and that three months should be sufficient to detect any non-compliant infected case imported by mistake.

In response to Member Countries' comments, the Code Commission confirms that in chapters that include a definition of countries or zones infected with the subject disease the phrase 'infected with [pathogenic agent]' is used; in chapters that do not include a definition of countries or zones infected with the subject disease the phrase 'not free from [disease]' is used; and the phrase 'considered infected with [disease]' is being progressively deleted from the *Code*.

In response to a Member Country's comment, the Code Commission noted that in the context of pigs imported from countries or zones for slaughter, 'immediate' means transported with no stopover and no holding time prior to slaughter.

The Code Commission did not accept a Member Country's suggestion to delete Article 15.X.7. because the provisions of the Article deliver effective risk management.

Articles 15.X.8. and 15.X.13. were deleted because wild and feral pigs are not epidemiologically significant, and outside the scope of the chapter. The Code Commission also reiterated that, as noted in the User's guide, the absence of an article on any given commodity does not mean that trade in that commodity cannot be conducted safely, or that Member Countries cannot apply appropriate measures.

Both the Scientific Commission and the Code Commission considered as unnecessary a Member Country's suggestion to add a waiting period to the provisions for donor males for semen exported from countries, zones or compartments free from PRRS.

In response to Member Countries' comments and on the basis of advice from the Scientific Commission, the Code Commission separated the provisions for importation of *in vivo* derived embryos into two articles according to countries, zones or compartments free from PRRS and those not free from PRRS. The Commissions noted that as a Category 3 disease in Chapter 4.7., there is preliminary evidence that the risk of PRRSV transmission in embryos is negligible, but additional *in vitro* and *in vivo* experimental data are required to substantiate this conclusion. If experimental data demonstrate that PRRSV is not transmitted via embryos these articles will be revised or deleted. The serological test provisions included for embryos are aligned with the corresponding requirements for live animals.

Article 15.X.14. was deleted because offal is included in the definition of meat (Article 15.X.12.).

In response to a Member Country's comment, the Code Commission added the requirement for investigation of suspected cases of PRRS to Article 15.X.16. point 2.

In response to Member Countries' comments, the Code Commission added a paragraph to Article 15.X.7. to note the limitations of serology in vaccinated animals in the absence of a test to differentiate infected from vaccinated animals.

In response to Member Countries' comments, the text of Article 15.X.17. point 3 was amended to align with the corresponding text in the *Manual*, and point 4 of this Article was amended to recognise that serology in unvaccinated animals with no maternal antibodies can be useful for detection of infection.

The revised Chapter 15.X. is attached as **Annex 38** for Member Countries' comments.

EU comment

The EU thanks the OIE and in general supports this draft new chapter. Comments are inserted in the text of Annex 38.

G. OTHER ISSUES

Item 23 Update of the Code Commission's work programme

Comments were received from New Zealand and EU.

The Code Commission reviewed and updated its work programme. Taking note of Member Countries' comments, the Code Commission reiterated its commitment to move forward steadily on planned work.

In response to a Member Country's request, the Code Commission added Crimean Congo hemorrhagic fever to the work programme for further consideration of how to develop a chapter.

Regarding a Member Country's request to add lactose as a safe commodity, the Code Commission agreed to assess the safety of lactose together with other commodities when the relevant disease-specific chapters are revised.

Regarding a Member Country's request to review sometimes repetitive and wordy surveillance articles, the Code Commission agreed and, with the cooperation of the Scientific Commission, will attempt to make them clear and concise. This revision will be done when disease-specific chapters are revised.

The revised work programme is attached as **Annex 39** for Member Countries' comments.

EU comment

The EU thanks the Code Commission for having considered previous comments regarding its work programme and priorities and supports the updated future work programme as presented. Comments are inserted in the text of Annex 39.

Item 24 Review of applications for recognition as OIE Collaborating Centres

a) Renaming of NZ-Australia Collaborating Centre (Animal Welfare Science and Bioethical Analysis);

b) Renaming of USA Collaborating Centre from "Online Veterinary Education" to "Distance Education Tools for OIE Day-One Veterinary Competencies and Continuing Education";

c) Application for recognition of Thai Collaborating Centre for Veterinary Public Health Capacity Building (Thailand).

The Code Commission endorsed the proposal to rename the existing OIE Collaborating Centre for Animal Welfare Science and Bioethical Analysis as the "David Bayvel OIE Collaborating Centre for Animal Welfare Science and Bioethical Analysis" in recognition of the late Dr Bayvel's contribution to the expansion of OIE's mandate to include animal welfare.

The Code Commission also noted and supported the proposal to rename a previously endorsed proposal from the USA as the OIE Collaborating Centre for "Distance Education Tools for OIE Day-One Veterinary Competencies and Continuing Education".

Finally the Code Commission reviewed the completed application from Thailand, and confirmed it met the required criteria to establish a Collaborating Centre for Veterinary Public Health Capacity Building.

Item 25 Dates of next meetings

The next Code Commission meeting will be held on September 5–16 inclusive, and the scheduled dates for the following meeting are February 13–24 2017.

Annex 4

USER'S GUIDE

EU position

The EU thanks the OIE and supports the adoption of this modified User's Guide.

A. Introduction

1) The OIE *Terrestrial Animal Health Code* (hereafter referred to as the *Terrestrial Code*) ~~sets out~~ establishes standards for the improvement of terrestrial animal health and welfare and veterinary public health worldwide. The purpose of this guide is to advise the Veterinary Authorities of OIE Member Countries on how to use the *Terrestrial Code*.

2) Veterinary Authorities should use the standards in the *Terrestrial Code* to set up measures providing for early detection, internal reporting, notification and control of pathogenic agents, including zoonotic ones, in terrestrial animals (mammals, birds and bees) and preventing their spread via international trade in animals and animal products, while avoiding unjustified sanitary barriers to trade.

3) The OIE standards are based on the most recent scientific and technical information. Correctly applied, they protect animal health and welfare and veterinary public health during production and trade in animals and animal products, and in the use of animals.

4) The absence of chapters, articles or recommendations on particular aetiological agents or commodities does not preclude the application of appropriate sanitary measures by the Veterinary Authorities, provided they are based on risk analyses conducted in accordance with the *Terrestrial Code*.

5) The complete text of the *Terrestrial Code* is available on the OIE Web site and individual chapters may be downloaded from: http://www.oie.int.

B. *Terrestrial Code* content

1) Key terms and expressions used in more than one chapter in the *Terrestrial Code* are defined in the Glossary~~,~~ in the case where common dictionary definitions are not deemed to be adequate. The reader should be aware of the definitions given in the Glossary when reading and using the *Terrestrial Code*. Defined terms appear in italics. In the on-line version of the *Terrestrial Code*, a hyperlink leads to the relevant definition.

2) The term '(under study)' is found in some rare instances, with reference to an article or part of an article. This means that this part of the text has not been adopted by the World Assembly of OIE Delegates and the particular provisions are thus not part of the *Terrestrial Code*.

3) The standards in the chapters of Section 1 are designed for the implementation of measures for the diagnosis, surveillance and notification of pathogenic agents. The standards include procedures for notification to the OIE, tests for international trade, and procedures for the assessment of the health status of a country, zone or compartment.

4) The standards in Section 2 are designed to guide the importing country in conducting import risk analysis in the absence of OIE recommendations on particular aetiological agents or commodities. The importing country should also use these standards to justify import measures which are more stringent than existing OIE standards.

5) The standards in the chapters of Section 3 are designed for the establishment, maintenance and evaluation of Veterinary Services, including veterinary legislation and communication. These standards are intended to assist the Veterinary Services of Member Countries to meet their objectives of improving terrestrial animal health and welfare and veterinary public health, as well as to establish and maintain confidence in their international veterinary certificates.

6) The standards in the chapters of Section 4 are designed for the implementation of measures for the prevention and control of pathogenic agents. Measures in this section include animal identification, traceability, zoning, compartmentalisation, disposal of dead animals, disinfection, disinsection and general hygiene precautions. Some chapters address the specific sanitary measures to be applied for the collection and processing of semen and embryos of animals.

Annex 4 (contd)

7) The standards in the chapters of Section 5 are designed for the implementation of general sanitary measures for trade. They address veterinary certification and the measures applicable by the exporting, transit and importing countries. A range of model veterinary certificates is provided to facilitate consistent documentation in international trade.

8) The standards in the chapters of Section 6 are designed for the implementation of preventive measures in animal production systems. These measures are intended to assist Member Countries in meeting their veterinary public health objectives. They include ante- and post-mortem inspection, control of hazards in feed, biosecurity at the animal production level, and the control of antimicrobial resistance in animals.

9) The standards in the chapters of Section 7 are designed for the implementation of animal welfare measures. The standards cover production, transport, and slaughter or killing, as well as the animal welfare aspects of stray dog population control and the use of animals in research and education.

10) The standards in each of the chapters of Sections 8 to 15 are designed to prevent the aetiological agents of OIE listed diseases, infections or infestations from being introduced into an importing country. The standards take into account the nature of the traded commodity, the animal health status of the exporting country, zone or compartment, and the risk reduction measures applicable to each commodity.

These standards assume that the agent is either not present in the importing country or is the subject of a control or eradication programme. Sections 8 to 15 each relate to the host species of the pathogenic agent: multiple species or single species of Apidae, Aves, Bovidae, Equidae, Leporidae, Caprinae and Suidae. Some chapters include specific measures to prevent and control the infections of global concern. Although the OIE aims to include a chapter for each OIE listed disease, not all OIE listed diseases have been covered yet by a specific chapter. This is work in progress, depending on available scientific knowledge and the priorities set by the World Assembly.

C. Specific issues

1. Notification

Chapter 1.1. describes Member Countries' obligations under OIE Organic Statutes. Listed and emerging diseases, as prescribed in Chapter 1.1., are compulsorily notifiable. Member Countries are encouraged to also provide information to the OIE on other animal health events of epidemiological significance.

Chapter 1.2. describes the criteria for the inclusion of a disease, infection or infestation in the OIE List and Chapter 1.2bis gives the current list. Diseases are divided into nine categories based on the host species of the aetiological agents.

2. Diagnostic tests and vaccines

It is recommended that specified diagnostic tests and vaccines in *Terrestrial Code* chapters be used with a reference to the relevant section in the OIE *Manual of Diagnostic Tests and Vaccines for Terrestrial Animals* (hereafter referred to as the *Terrestrial Manual*). ~~Chapter 1.3. provides a table summarising the prescribed and alternative diagnostic tests for OIE listed diseases.~~ Experts responsible for facilities used for disease diagnosis and vaccine production should be fully conversant with the standards in the *Terrestrial Manual*.

2bis. Freedom from a disease, infection or infestation

Article 1.4.6. provides general principles for declaring a country or zone free from a disease, infection or infestation. This article applies when there are no specific requirements in the disease-specific chapter.

3. Prevention and control

Chapters 4.3. and 4.4. describe the measures that should be implemented to establish zones and compartments. Zoning and compartmentalisation should be considered as tools ~~used~~ to control diseases and to facilitate safe trade.

Chapters 4.5. to 4.11. describe the measures which should be implemented during collection and processing of semen and embryos of animals, including micromanipulation and cloning, in order to prevent animal health risks, especially when trading these commodities. Although the measures relate principally to OIE listed diseases or infections, general standards apply to all infectious disease risks. Moreover, in Chapter 4.7. diseases that are not listed are marked as such but are included for the information of Member Countries.

Chapter 4.14. addresses the specific issue of the control of bee diseases and some of its trade implications. This chapter should be read in conjunction with the specific bee disease chapters in Section 9.

Chapter 6.4. is designed for the implementation of general biosecurity measures in intensive poultry production. Chapter 6.5. is an example of a specific on-farm prevention and control plan for the non-listed food-borne pathogen *Salmonella* in poultry.

Chapter 6.11. deals specifically with the zoonotic risk associated with the movements of non-human primates and gives standards for certification, transportation and import conditions for these animals.

4. Trade requirements

Animal health measures related to international trade should be based on OIE standards. A Member Country may authorise the importation of animals or animal products into its territory under conditions different from those recommended by the *Terrestrial Code*. To scientifically justify more stringent measures, the importing country should conduct a risk analysis in accordance with OIE standards, as described in Chapter 2.1. Members of the WTO should refer to the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement).

Chapters 5.1. to 5.3. describe the obligations and ethical responsibilities of importing and exporting countries in international trade. Veterinary Authorities and all veterinarians directly involved in international trade should be familiar with these chapters. Chapter 5.3. also describes the OIE informal procedure for dispute mediation.

The OIE aims to include an article listing the commodities that are considered safe for trade without the ~~imposition of pathogen-specific sanitary~~ need for risk mitigation measures specifically directed against a particular listed disease, infection or infestation, regardless of the status of the ~~exporting~~ country or zone of origin for the agent in question, at the beginning of each disease-specific chapter in Sections 8 to 15. This is work in progress and some chapters do not yet contain articles listing safe commodities. When a list of safe commodities is present in a chapter, importing countries should not apply trade restrictions to such commodities with respect to the agent in question.

5. International veterinary certificates

An international veterinary certificate is an official document that the Veterinary Authority of an exporting country issues in accordance with Chapters 5.1. and 5.2. It lists animal health requirements and, where appropriate, public health requirements for the exported commodity. The quality of the exporting country's Veterinary Services is essential in providing assurances to trading partners regarding the safety of exported animals and products. This includes the Veterinary Services' ethical approach to the provision of veterinary certificates and their history in meeting their notification obligations.

International veterinary certificates underpin international trade and provide assurances to the importing country regarding the health status of the animals and products imported. The measures prescribed should take into account the health status of both exporting and importing countries, and zones or compartments within them, and be based upon the standards in the *Terrestrial Code*.

The following steps should be taken when drafting international veterinary certificates:

a) identify the diseases, infections or infestations from which the importing country is justified in seeking protection because of its own health status. Importing countries should not impose measures in regards to diseases that occur in their own territory but are not subject to official control programmes;

b) for commodities capable of transmitting these diseases, infections or infestations through international trade, the importing country should apply the relevant articles in the disease-specific chapters. The application of the articles should be adapted to the disease status of the ~~exporting~~ country, zone or compartment of origin. Such status should be established according to Article 1.4.6. except when articles of the relevant disease chapter specify otherwise;

Annex 4 (contd)

c) when preparing international veterinary certificates, the importing country should endeavour to use terms and expressions in accordance with the definitions given in the Glossary. ~~As stated in Article 5.2.3.,~~ ~~international~~ International veterinary certificates should be kept as simple as possible and should be clearly worded, to avoid misunderstanding of the importing country's requirements;

d) Chapters 5.10. to 5.13. provide, as further guidance to Member Countries, model certificates that should be used as a baseline.

6. Guidance notes for importers and exporters

It is recommended that Veterinary Authorities prepare 'guidance notes' to assist importers and exporters understand trade requirements. These notes should identify and explain the trade conditions, including the measures to be applied before and after export and during transport and unloading, and the relevant legal obligations and operational procedures. The guidance notes should advise on all details to be included in the health certification accompanying the consignment to its destination. Exporters should also be reminded of the International Air Transport Association rules governing air transport of animals and animal products.

— Text deleted.

Annex 5

GLOSSARY

EU position
The EU thanks the OIE and supports the adoption of this modified glossary, with the exception of the modified definition of "casings" which cannot be accepted as proposed. Important comments that should be taken into account before adoption are inserted in the text below.

~~***ACCEPTABLE RISK***~~

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

ANIMAL

means a mammal, reptile, bird or bee.

~~***APPROPRIATE LEVEL OF PROTECTION***~~

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

CASINGS

means intestines, oesophagus and bladders ~~and intestines~~ ~~which~~ that, after cleaning, have been processed by tissue scraping, defatting and washing, and have been treated with salt ~~or dried~~.

EU position
The EU thanks the OIE for having taken one of its previous comments into account, by deleting the words "or dried".
However, the addition of the word "oesophagus" cannot be supported at this late stage of the standard setting process. Indeed, the nature of the oesophagus is significantly different from the intestine from an anatomical point of view, as it consists to a much larger extent of muscle tissue (incl. skeletal or striated muscle), even if it may be used as an edible envelope in some food specialties in some parts of the world. Therefore, from a safety point of view as regards animal pathogens, the oesophagus cannot be compared with other parts of the intestinal tract which are commonly used for the production of casings. Indeed, in the EU the oesophagus is regarded as fresh meat or meat product, depending on the treatment, and not as casing.
To be included in the definition of casings, the muscle tissue of the oesophagus would have to be thoroughly scraped away to leave only the thin collagen layers of the submucosa in the final product, as is the case for casings made e.g. from intestines of pigs and sheep. However, it is understood that only the oesophagus of bovine animals is used for the production of casings, and that in general beef casings retain all original layers, including the *tunica muscularis* (see Scientific Opinion of the Food Safety Authority (EFSA) of 2012 on animal health risk mitigation treatments as regards

imports of animal casings, Appendix 1 p. 28-31, available at http://www.efsa.europa.eu/en/efsajournal/pub/2820.)

Thus, in order to accept the inclusion of oesophagus in the OIE definition of casings, the nature of the final product would need to be described in more detail. Otherwise, a product consisting mostly of muscle tissue could be seen as falling under the definition proposed above. From an animal health risk point of view, that would have important consequences when listing casings as safe commodities, as a higher level of risk would have to be presumed for all casings in general (comparable with that of fresh meat / meat products), whether consisting of or containing oesophagus or not.

Therefore, the EU cannot accept the addition of the word "oesophagus" in the definition of casings. Furthermore, since also stomachs as well as bladders are indeed used as edible envelopes to produce local food specialities in some parts of the world, however have divergent characteristics and are possibly not subjected to the standard salt treatment, the EU proposes to narrow down the definition of casings in the OIE Code to cover only those commodities that are commonly traded internationally, i.e. casings made of intestines only. The OIE definition would thus read as follows:

"Casings means intestines that, after cleaning, have been processed by tissue scraping, defatting and washing, and have been treated with salt."

~~***EQUIVALENCE OF SANITARY MEASURES***~~

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

STAMPING-OUT POLICY

means a policy designed to eliminate an *outbreak* by carrying out under the authority of the *Veterinary Authority* the following:

a) the *killing* of the *animals* which are affected and those suspected of being affected in the *herd* and, where appropriate, those in other *herds* which have been exposed to *infection* by direct animal to animal contact, or by indirect contact with the causal pathogen; ~~this includes all susceptible *animals*, vaccinated or unvaccinated, on infected *establishments*;~~ *animals* should be killed in accordance with Chapter 7.6.;

b) the ~~destruction~~ disposal of ~~their~~ carcasses, and where relevant, animal products, ~~as relevant,~~ by rendering, burning or burial, or by any other method described in Chapter 4.12.;

c) the cleansing and *disinfection* of *establishments* through procedures defined in Chapter 4.13.

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— Text deleted.

Annex 6

CHAPTER 1.1.

NOTIFICATION OF DISEASES, INFECTIONS AND INFESTATIONS, AND PROVISION OF EPIDEMIOLOGICAL INFORMATION

EU position

The EU supports the adoption of this modified chapter.

In general, certain definitions in the Glossary should be reviewed further to the new convention of including "infestations" along with "diseases" and "infections", whenever the latter two terms are used (e.g. in the definition of "Notification").

Article 1.1.1.

For the purposes of the *Terrestrial Code* and in terms of Articles 5, 9 and 10 of the OIE Organic Statutes, Member Countries shall recognise the right of the *Headquarters* to communicate directly with the *Veterinary Authority* of its territory or territories.

All *notifications* and all information sent by the OIE to the *Veterinary Authority* shall be regarded as having been sent to the country concerned and all *notifications* and all information sent to the OIE by the *Veterinary Authority* shall be regarded as having been sent by the country concerned.

~~For the purposes of this chapter, 'event' means a single *outbreak* or a group of epidemiologically related *outbreaks* of a given *disease*, *infection* or *infestation* that is the object of a *notification*. An event is specific to a pathogen and strain, when appropriate, and includes all related *outbreaks* reported from the time of the immediate *notification* through to the final report. *Notification* of an event includes host species, number and geographical distribution of affected animals and *epidemiological units*.~~

Article 1.1.2.

1) Member Countries shall make available to other Member Countries, through the OIE, whatever information is necessary to minimise the spread of important animal *diseases*, and their aetiological agents, and to assist in achieving better worldwide control of these *diseases*.

2) To achieve this, Member Countries shall comply with the *notification* requirements specified in Articles 1.1.3. and 1.1.4.

3) For the purposes of this chapter, an 'event' means a single *outbreak* or a group of epidemiologically related *outbreaks* of a given *disease*, *infection* or *infestation* that is the subject of a *notification*. An event is specific to a pathogen and strain, when appropriate, and includes all related *outbreaks* reported from the time of the immediate *notification* through to the final report. Reports of an event include susceptible species, number and geographical distribution of affected animals and *epidemiological units*.

~~3~~4) To assist in the clear and concise exchange of information, reports shall conform as closely as possible to the ~~official~~ OIE *disease* reporting format.

~~4~~5) The detection of the aetiological agent of a *listed disease* in an *animal* should be reported, even in the absence of clinical signs. Recognising that scientific knowledge concerning the relationship between *diseases* and their aetiological agents is constantly developing and that the presence of an aetiological agent does not necessarily imply the presence of a *disease*, Member Countries shall ensure, through their reports, that they comply with the spirit and intention of point 1 above.

~~5~~6) In addition to notifying new findings in accordance with Articles 1.1.3. and 1.1.4., Member Countries shall also provide information on the measures taken to prevent the spread of *diseases*, *infections* and

infestations. Information shall include quarantine measures and restrictions ~~on~~ applied to the movement of *animals*, animal products, biological products and other miscellaneous objects which could by their nature be responsible for ~~their~~ transmission of *diseases*, *infections* and *infestations*. In the case of *diseases* transmitted by *vectors*, the measures taken against such *vectors* shall also be specified.

Article 1.1.3.

Veterinary Authorities shall, under the responsibility of the Delegate, send to the *Headquarters*:

1) in accordance with relevant provisions in the *disease*-specific chapters, *notification,* through the World Animal Health Information System (WAHIS) or by fax or ~~e-mail~~ email within 24 hours, of any of the following events:

   a) first occurrence of a *listed disease*, *infection* or *infestation* in a country, a *zone* or a *compartment*;

   b) ~~re-occurrence~~ recurrence of a *listed disease*, *infection* or *infestation* in a country, a *zone* or a *compartment* following the final report that declared the *outbreak* ended;

   c) first occurrence of a new strain of a pathogenic agent of a *listed disease*, *infection* or *infestation* in a country, a *zone* or a *compartment*;

   d) a sudden and unexpected change in the distribution or increase in incidence or virulence of, or morbidity or mortality caused by, the aetiological agent of a *listed disease*, *infection* or *infestation* present within a country, a *zone* or a *compartment*;

   e) occurrence of a *listed disease*, *infection* or *infestation* in an unusual host species;

2) weekly reports subsequent to a *notification* under point 1 above, to provide further information on the evolution of the event which justified the *notification*. These reports should continue until the *disease*, *infection* or *infestation* has been eradicated or the situation has become sufficiently stable so that six-monthly reporting under point 3 will satisfy the obligation of the Member Country; for each event notified, a final report ~~on the event~~ should be submitted;

3) six-monthly reports on the absence or presence~~,~~ and evolution of *listed diseases*, *infections* or *infestations* and information of epidemiological significance to other Member Countries;

4) annual reports concerning any other information of significance to other Member Countries.

Article 1.1.4.

Veterinary Authorities shall, under the responsibility of the Delegate, send to the *Headquarters*:

1) a *notification* through WAHIS or by fax or ~~e-mail~~ email, when an *emerging disease* has been detected in a country, a *zone* or a *compartment*;

2) periodic reports subsequent to a *notification* of an *emerging disease*~~, as described under point 1. These~~ should continue~~ until:~~

   a) for the time necessary to have reasonable certainty that:

      i) the *disease*, *infection* or *infestation* has been eradicated; or

      ii~~b~~) the situation has become~~s sufficiently~~ stable; ~~or~~

   OR

   b~~c~~) until sufficient scientific information is available to determine whether it meets the criteria for ~~listing~~ inclusion in the OIE list as described in Chapter 1.2.;

3) a final report once point 2 a) or b) above is complied with~~, a final report should be submitted~~.

Annex 6 (contd)

Article 1.1.5.

1) The *Veterinary Authority* of a country in which an *infected zone* ~~was~~ is located shall inform the *Headquarters* when this *zone* or the entire country ~~is~~ becomes free from the *disease*, *infection* or *infestation*.

~~2) An *infected zone* for a particular *disease*, *infection* or *infestation* shall be considered as such until a period exceeding the *infective period* specified in the *Terrestrial Code* has elapsed after the last reported *case*, and when full prophylactic and appropriate animal health *biosecurity* measures and *surveillance* have been applied to prevent possible recurrence reappearance or spread of the *disease*, *infection* or *infestation*. These measures will be found are described in detail in the various relevant disease specific chapters of Volume II of the *Terrestrial Code*.~~

~~3~~2) A ~~Member Country~~ country or *zone* may be considered to have regained freedom from a specific *disease*, *infection* or *infestation* when all relevant conditions given in the *Terrestrial Code* have been fulfilled.

~~4~~3) The *Veterinary Authority* of a Member Country which ~~sets up~~ establishes one or several *free zones* shall inform the *Headquarters* giving necessary details, including the criteria on which the free status is based, the requirements for maintaining the status and indicating clearly the location of the *zones* on a map of the territory of the Member Country.

Article 1.1.6.

1) Although Member Countries are only required to notify *listed diseases*, *infections* and *infestations* and *emerging diseases*, they are encouraged to provide ~~inform~~ the OIE with ~~of~~ other important animal health ~~events~~ information.

2) The *Headquarters* shall communicate by ~~e-mail~~ email or through the interface of the World Animal Health Information ~~Database~~ System (~~WAHID~~ WAHIS) to *Veterinary Authorities* all *notifications* received as provided in Articles 1.1.2. to 1.1.5. and other relevant information.

— Text deleted.

Annex 7

CHAPTER 1.2.

CRITERIA FOR THE INCLUSION OF DISEASES, INFECTIONS AND INFESTATIONS IN THE OIE LIST

EU position

The EU thanks the OIE and in general supports the adoption of this modified chapter. A comment is inserted in the text below.

Article 1.2.1.

Introduction

~~The aim of this~~ This chapter ~~is to~~ describes the criteria for the inclusion of *diseases*, *infections* and *infestations* in Chapter 1.2.bis ~~on the OIE list~~.

The objective of listing *diseases* is to support Member Countries' ~~–~~ by providing information needed to take appropriate action ~~efforts~~ to prevent the transboundary spread of important animal *diseases*, including *zoonoses*~~,~~. This is achieved by ~~through~~ transparent, timely and consistent *notification* ~~reporting~~.

EU comment

For reasons of consistency, the EU suggests adding the words "<u>, infections and infestations</u>" after the word "diseases" in the paragraph above.

Each *listed disease* normally has a corresponding chapter that ~~to~~ assists Member Countries in the harmonisation of *disease* detection, prevention and control, ~~.~~ and provides standards for safe *international trade* in *animals* and their products.

The ~~Requirements~~ requirements for *notification* are detailed in Chapter 1.1. ~~and *notifications* are to be made through WAHIS or, if not possible, by fax or e-mail as described in Article 1.1.3.~~

Principles ~~for selection~~ and methods of validation of diagnostic tests are described in Chapter 1.1.5. of the *Terrestrial Manual*.

Article 1.2.2.

The criteria for the inclusion of a *disease*, *infection* or *infestation* in the OIE list are as follows:

1) International spread of the pathogenic agent (via live *animals* or their products, *vectors* or fomites) has been proven.

AND

2) At least one country has demonstrated freedom or impending freedom from the *disease*, *infection* or *infestation* in populations of susceptible *animals*, based on the ~~animal health surveillance~~ provisions of ~~the *Terrestrial Code*, in particular those contained in~~ Chapter 1.4.

AND

3) ~~A~~ Reliable means of detection and diagnosis exists ~~and a precise *case* definition is available to clearly identify *cases* and allow them to be distinguished from other *diseases*, *infections* and *infestations*~~.

AND

~~4~~3)

a) Natural transmission to humans has been proven, and human infection is associated with severe consequences.

OR

b) The *disease* has been shown to ~~cause~~ have a significant impact on the health of ~~morbidity or~~ ~~mortality~~ ~~in~~ domestic *animals* at the level of a country or a *zone* taking into account the occurrence and severity of the clinical signs, including direct production losses and mortality.

OR

c) The *disease* has been shown to, or scientific evidence indicates that it would, ~~cause~~ have a significant impact on the health of ~~morbidity or mortality in *wild*~~ *wildlife* ~~*animal*~~ ~~populations~~ taking into account the occurrence and severity of the clinical signs, including direct ~~production~~ economic losses and mortality, and ~~ecological~~ any threat~~s~~ to the viability of a *wildlife* population.

~~AND~~

~~4) A reliable means of detection and diagnosis exists and a precise *case* definition is available to clearly identify *cases* and allow them to be distinguished from other *diseases*, *infections* and *infestations*.~~

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— Text deleted.

Annex 8

CHAPTER 1.2.BIS

DISEASES, INFECTIONS AND INFESTATIONS LISTED BY THE OIE

~~Article 1.2.3.~~

EU position
The EU thanks the OIE and in general supports the adoption of this new chapter.
The EU draws the attention of the OIE to the need, once this new chapter is adopted, to amend the reference in the glossary definition of "listed disease" (which now reads "means a *disease, infection* or *infestation* listed in Article 1.2.3. after adoption by the World Assembly of OIE Delegates"). This should ideally be done in parallel to the adoption of this new Chapter 1.2.bis. (Furthermore, it is understood that should the current Chapter 1.1.3. be deleted as proposed, this chapter and its articles as well as any reference thereto will be renumbered accordingly once adopted.)
A further comment is inserted in the text below.

Preamble

The following *diseases*, *infections* and *infestations* are included in the OIE list.

EU comment
The sentence above is awkward. Indeed, the former list of diseases has been replaced by several articles which include diseases. Therefore, the below articles and the diseases listed therein in future will constitute the OIE list of (terrestrial) animal diseases. For reasons of clarity, the EU thus suggests amending that sentence to read as follows:
"The ~~following~~ *diseases, infections* and *infestations* ~~are included in~~ contained in Articles 1.2.bis.1 through 1.2.bis.9 constitute the OIE list of terrestrial animal diseases."

In case of modifications of this list ~~of animal *diseases*, *infections* and *infestations*~~ adopted by the World Assembly, the new list comes into force on 1 January of the following year.

Article 1.2.bis.1.

~~1)~~ The following are included within the category of multiple species *diseases*, *infections* and *infestations*:

- Anthrax
- Bluetongue
- Infection with ~~Brucellosis (~~*Brucella abortus, Brucella melitensis, Brucella suis* ~~)~~
- ~~Brucellosis (*Brucella melitensis*)~~
- ~~Brucellosis (*Brucella suis*)~~
- Crimean Congo h~~a~~emorrhagic fever
- Epizootic h~~a~~emorrhagic disease

- Equine encephalomyelitis (Eastern)
- Infection with ~~Foot~~ foot and mouth disease virus
- Heartwater
- Infection with Aujeszky's disease virus
- Infection with *Echinococcus granulosus*
- Infection with *Echinococcus multilocularis*
- Infection with rabies virus
- Infection with Rift Valley fever virus
- Infection with rinderpest virus
- Infection with *Trichinella* spp.
- Japanese encephalitis
- New World screwworm (*Cochliomyia hominivorax*)
- Old World screwworm (*Chrysomya bezziana*)
- Paratuberculosis
- Q fever
- Surra (*Trypanosoma evansi*)
- Tularemia
- West Nile fever.

Article 1.2.bis.2.

~~2)~~ The following are included within the category of cattle *diseases* and *infections*:

- Bovine anaplasmosis
- Bovine babesiosis
- Bovine genital campylobacteriosis
- Bovine spongiform encephalopathy
- Bovine tuberculosis
- Bovine viral diarrhoea
- Enzootic bovine leukosis
- Haemorrhagic septicaemia
- Infectious bovine rhinotracheitis/infectious pustular vulvovaginitis
- Infection with *Mycoplasma mycoides* subsp. *mycoides* SC (Contagious bovine pleuropneumonia)
- Lumpy skin disease
- Theileriosis
- Trichomonosis
- Trypanosomosis (tsetse-transmitted).

Article 1.2.bis.3.

~~3)~~ The following are included within the category of sheep and goat *diseases* and *infections*:

- Caprine arthritis/encephalitis
- Contagious agalactia

- Contagious caprine pleuropneumonia
- Infection with *Chlamydophila abortus* (Enzootic abortion of ewes, ovine chlamydiosis)
- Infection with peste des petits ruminants virus
- Maedi–visna
- Nairobi sheep disease
- Ovine epididymitis (*Brucella ovis*)
- Salmonellosis (*S.* abortus ovis)
- Scrapie
- Sheep pox and goat pox.

Article 1.2.bis.4.

~~4)~~ The following are included within the category of equine *diseases* and *infections*:

- Contagious equine metritis
- Dourine
- Equine encephalomyelitis (Western)
- Equine infectious anaemia
- Equine influenza
- Equine piroplasmosis
- Glanders
- Infection with African horse sickness virus
- Infection with equid herpesvirus-1 (EHV-1)
- Infection with equine arteritis virus
- Venezuelan equine encephalomyelitis.

Article 1.2.bis.5.

~~5)~~ The following are included within the category of swine *diseases* and *infections*:

- African swine fever
- Infection with classical swine fever virus
- Nipah virus encephalitis
- Infection with *Taenia solium* ~~Porcine cysticercosis~~ (Porcine cysticercosis)
- Porcine reproductive and respiratory syndrome
- Transmissible gastroenteritis.

Article 1.2.bis.6.

~~6)~~ The following are included within the category of avian *diseases* and *infections*:

- Avian chlamydiosis
- Avian infectious bronchitis
- Avian infectious laryngotracheitis
- Avian mycoplasmosis (*Mycoplasma gallisepticum*)
- Avian mycoplasmosis (*Mycoplasma synoviae*)

- Duck virus hepatitis
- Fowl typhoid
- Infection with avian influenza viruses
- Infection with influenza A viruses of high pathogenicity in birds other than *poultry*, including wild birds
- Infection with Newcastle disease virus
- Infectious bursal disease (Gumboro disease)
- Pullorum disease
- Turkey rhinotracheitis.

Article 1.2.bis.7.

~~7)~~ The following are included within the category of lagomorph *diseases* and *infections*:

- Myxomatosis
- Rabbit haemorrhagic disease.

Article 1.2.bis.8.

~~8)~~ The following are included within the category of bee *diseases*, *infections* and *infestations*:

- Infection of honey bees with *Melissococcus plutonius* (European foulbrood)
- Infection of honey bees with *Paenibacillus larvae* (American foulbrood)
- Infestation of honey bees with *Acarapis woodi*
- Infestation of honey bees with *Tropilaelaps* spp.
- Infestation of honey bees with *Varroa* spp. (Varroosis)
- Infestation with *Aethina tumida* (Small hive beetle).

Article 1.2.bis.9.

~~9)~~ The following are included within the category of other *diseases* and *infections*:

- Camelpox
- Leishmaniosis.

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— Text deleted.

Annex 9

CHAPTER 1.3.

PRESCRIBED AND ALTERNATIVE DIAGNOSTIC TESTS FOR OIE LISTED DISEASES

EU position

The EU supports the deletion of this chapter.

NOTE

In many of the *Terrestrial Code* chapters relating to specific *diseases*, the reader is referred to the *Terrestrial Manual* for information on OIE standards for the relevant diagnostic tests and vaccines.

However, some readers of the *Terrestrial Code* may need to know which diagnostic tests are recommended by the OIE for use in the *international trade* of *animals* or animal products, without requiring the details of how these tests should be performed.

The tables in this chapter have been included to meet this need. These tables show, for each OIE *listed diseases*, the diagnostic tests which can be used when the *Terrestrial Code* recommends a testing procedure.

These tests should be performed in accordance with the specifications in the *Terrestrial Manual*, in order to avoid any differences between the *exporting* and *importing countries* in the interpretation of results.

In the tables, the diagnostic tests have been divided into two categories - 'prescribed tests' and 'alternative tests' (a similar categorisation is made in the *Terrestrial Manual*). The 'prescribed tests' are those which are considered optimal for determining the health status of *animals* before shipment. 'Alternative tests' do not demonstrate the absence of *infection* in the tested *animals* with the same level of confidence as the prescribed tests do. However, the OIE Terrestrial Animal Health Standards Commission considers that an 'alternative test', chosen by mutual agreement between the *importing* and *exporting countries*, can provide valuable information for evaluating the *risks* of any proposed trade in *animals* or animal products. The *disease* for which the *Terrestrial Code* does not require any test are not included in the tables.

ABBREVIATIONS AND ACRONYMS

Agent id.	Agent identification
Agg.	Agglutination test
AGID	Agar gel immunodiffusion
BBAT	Buffered *Brucella* antigen test
CF	Complement fixation (test)
DTH	Delayed-type hypersensitivity
ELISA	Enzyme-linked immunosorbent assay
FAVN	Fluorescent antibody virus neutralisation
FPA	Fluorescence polarisation assay
HI	Haemagglutination inhibition
IFA	Indirect fluorescent antibody (test)
MAT	Microscopic agglutination test
NPLA	Neutralising peroxidase-linked assay
PCR	Polymerase chain reaction
PRN	Plaque reduction neutralisation
VN	Virus neutralisation
–	No test designated yet

Terrestrial Code Chapter No.	*Terrestrial Manual* Chapter No.	Disease name	Prescribed tests	Alternative tests
		OIE listed diseases		

8.9.	2.1.6.	Heartwater	-	ELISA, IFA
	2.1.9.	Leptospirosis	-	MAT
8.11.	2.1.10.	New world screwworm *(Cochliomyiahominivorax)* and old world screwworm *(Chrysomyabezziana)*	-	Agent id.
8.12.	2.1.11.	Paratuberculosis	-	DTH, ELISA
8.13.	2.1.13.	Rabies	ELISA, VN	-
8.14.	2.1.14.	Rift Valley fever	VN	ELISA, HI
8.15.	2.1.15.	Rinderpest	-	VN
8.16.	2.1.16.	Trichinellosis	Agent id.	ELISA
8.17.	2.1.18.	Tularemia	-	Agent id.
	2.1.19.	Vesicular stomatitis	CF, ELISA, VN	-

Annex 9 (contd)

Bovidae				
11.1.	2.4.1.	Bovine anaplasmosis	-	CAT, CF
11.2.	2.4.2	Bovine babesiosis	PCR	CF, ELISA, IFA
	2.4.3.	Bovine brucellosis	BBAT, CF, ELISA, FPA	-
11.3.	2.4.5.	Bovine genital campylobacteriosis	Agent id.	-
11.5.	2.4.7.	Bovine tuberculosis	Tuberculin test	Interferon gamma release
11.7.	2.4.9.	Contagious bovine pleuropneumonia	CF, ELISA	-
11.8.	2.4.11.	Enzootic bovine leukosis	AGID, ELISA	PCR
11.9.	2.4.12.	Haemorrhagic septicaemia	-	Agent id.
11.10.	2.4.13.	Infectious bovine rhinotracheitis/ infectious pustular vulvovaginitis	Agent id. (semen only), ELISA, PCR, VN	-
11.11.	2.4.14.	Lumpy skin disease	-	VN
11.12.	2.4.16.	Theileriosis	Agent id., IFA	-
11.13.	2.4.17.	Trichomonosis	Agent id.	Mucus agg.
Caprinae				
.	2.7.2.	Caprine and ovine brucellosis (excluding *Brucellaovis*)	BBAT, CF, ELISA, FPA	Brucellin test
14.1.	2.7.3.	Caprine arthritis/encephalitis	AGID, ELISA	-
14.5.	2.7.4.	Maedi-visna	AGID, ELISA	-
14.3.	2.7.6.	Contagious caprine pleuropneumonia	-	-
14.4.	2.7.7.	Enzootic abortion of ewes	-	CF
14.6.	2.7.9.	Ovine epididymitis *(Brucellaovis)*	CF	ELISA
14.7.	2.7.11.	Peste des petits ruminants	VN	ELISA
14.9.	2.7.14.	Sheep pox and goat pox	-	VN

Annex 9 (contd)

Equidae				
12.1.	2.5.1.	African horse sickness	CF, ELISA	Agent id. (real time PCR), VN
12.2.	2.5.2.	Contagious equine metritis	Agent id.	-
12.3.	2.5.3.	Dourine	CF	ELISA, IFA
12.4.	2.5.5.	Equine encephalomyelitis (Eastern and Western)	-	CF, HI, PRN
12.5.	2.5.6.	Equine infectious anaemia	AGID	ELISA
12.6.	2.5.7.	Equine influenza	-	HI
12.7.	2.5.8.	Equine piroplasmosis	ELISA, IFA	CF
12.8.	2.5.9.	Equine rhinopneumonitis	-	VN
12.9.	2.5.10.	Equine viral arteritis	Agent id. (semen only), VN	-
12.10.	2.5.11.	Glanders	CF	-
12.11.	2.5.13.	Venezuelan equine encephalomyelitis	-	CF, HI, PRN
Suidae				
15.1.	2.8.1.	African swine fever	ELISA	IFA
15.2.	2.8.3.	Classical swine fever	ELISA, FAVN, NPLA	-
	2.8.5.	Porcine brucellosis	BBAT, CF, ELISA, FPA	-
	2.8.9.	Swine vesicular disease	VN	ELISA
15.3.	2.8.11.	Transmissible gastroenteritis	-	ELISA, VN
Aves				
10.2.	2.3.2.	Avian infectious bronchitis	-	ELISA, HI, VN
10.3.	2.3.3.	Avian infectious laryngotracheitis	-	AGID, ELISA, VN
10.4.	2.3.4.	Avian influenza	Virus isolation with pathogenicity testing	AGID, HI
10.5.	2.3.5.	Avian mycoplasmosis *(Mycoplasmagallisepticum)*	-	Agg., HI
10.7.	2.3.11.	Fowl typhoid and Pullorum disease	-	Agent id., Agg.
10.8.	2.3.12.	Infectious bursal disease	-	AGID, ELISA
	2.3.13.	Marek's disease	-	AGID
10.9.	2.3.14.	Newcastle disease	Virus isolation	HI

Annex 9 (contd)

~~**Leporidae**~~				
~~13.1.~~	~~2.6.1.~~	~~Myxomatosis~~	~~-~~	~~AGID, CF, IFA~~
~~13.2.~~	~~2.6.2.~~	~~Rabbit haemorrhagic disease~~	~~-~~	~~ELISA, HI~~

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— Text deleted.

Annex 10

CHAPTER 3.2.

EVALUATION OF VETERINARY SERVICES

EU position

The EU thanks the OIE for its work. The EU can support the adoption of this chapter's modified article.

Article 3.2.14.

This article outlines appropriate information requirements for the self-evaluation or evaluation of the *Veterinary Services* of a country.

1. Organisation and structure of Veterinary Services

   a) National Veterinary Authority

      Organisational chart including numbers, positions and numbers of vacancies.

   b) Sub-national components of the Veterinary Authority

      Organisational charts including numbers, positions and number of vacancies.

   c) Other providers of veterinary services

      Description of any linkage with other providers of veterinary services.

2. National information on human resources

   a) Veterinarians

      i) Total numbers of *veterinarians* registered or licensed by the *Veterinary statutory body* of the country.

      ii) Numbers of:

      – full time government *veterinarians*: national and sub-national;

      – part time government *veterinarians*: national and sub-national;

      – private *veterinarians* authorised by the *Veterinary Services* to perform official veterinary functions *[Describe accreditation standards, responsibilities and limitations applying to these private veterinarians.]*;

      – other *veterinarians*.

      iii) Animal health and welfare:

      Numbers associated with farm livestock sector on a majority time basis in a veterinary capacity, by geographical area *[Show categories and numbers to differentiate staff involved in field service, laboratory, administration, import and export and other functions, as applicable.]*:

      – full time government *veterinarians*: national and sub-national;

      – part time government *veterinarians*: national and sub-national;

– other *veterinarians*.

iv) Veterinary public health:

Numbers employed in food inspection on a majority time basis, by commodity *[Show categories and numbers to differentiate staff involved in inspection, laboratory and other functions, as applicable.]*:

– full time government *veterinarians*: national and sub-national;

– part time government *veterinarians*: national and sub-national;

– other *veterinarians*.

v) Numbers of veterinarians relative to certain national indices:

– per total human population;

– per farm livestock population, by geographical area;

– per livestock farming unit, by geographical area.

vi) Veterinary education:

– number of veterinary schools;

– length of veterinary course (years);

– curriculum addressing the minimum competencies of day 1 veterinary graduates and the post-graduate and continuing education topics to assure the delivery of quality veterinary services, as described in the relevant chapter(s) of the *Terrestrial Code*;

– international recognition of veterinary degree.

vii) Veterinary professional associations.

b) Graduate personnel (non-veterinary)

Details to be provided by category (including biologists, biometricians, economists, engineers, lawyers, other science graduates and others) on numbers within the *Veterinary Authority* and available to the *Veterinary Authority*.

c) Veterinary para-professionals employed by the Veterinary Services

i) Animal health and welfare:

– Categories and numbers involved with farm livestock on a majority time basis:

– by geographical area;

– proportional to numbers of field Veterinary Officers in the *Veterinary Services*, by geographical area.

– Education or training details.

ii) Veterinary public health:

– Categories and numbers involved in food inspection on a majority time basis:

– *meat* inspection: export *meat* establishments with an export function and domestic *meat* establishments (no export function);

– dairy inspection;

- other foods.
- Numbers in import and export inspection.
- Education or training details.

d) Support personnel

Numbers directly available to *Veterinary Services* per sector (administration, communication, transport).

e) Descriptive summary of the functions of the various categories of staff mentioned above

f) Veterinary, *veterinary para-professionals*, livestock owner, farmer and other relevant associations

g) Additional information or comments.

3. Financial management information

a) Total budgetary allocations to the *Veterinary Authority* for the current and past two fiscal years:

i) for the national *Veterinary Authority*;

ii) for each of any sub-national components of the *Veterinary Authority*;

iii) for other relevant government-funded institutions.

b) Sources of the budgetary allocations and amount:

i) government budget;

ii) sub-national authorities;

iii) taxes and fines;

iv) grants;

v) private services.

c) Proportional allocations of the amounts in a) above for operational activities and for the programme components of *Veterinary Services*.

d) Total allocation proportionate of national public sector budget. *[This data may be necessary for comparative assessment with other countries which should take into account the contexts of the importance of the livestock sector to the national economy and of the animal health status of the country.]*

e) Actual and proportional contribution of animal production to gross domestic product.

4. Administration details

a) Accommodation

Summary of the numbers and distribution of official administrative centres of the *Veterinary Services* (national and sub-national) in the country.

b) Communications

Summary of the forms of communication systems available to the *Veterinary Services* on a nation-wide and local area bases.

c) Transport

i) Itemised numbers of types of functional transport available on a full-time basis for the *Veterinary Services*. In addition provide details of transport means available part-time.

ii) Details of annual funds available for maintenance and replacement of motor vehicles.

5. Laboratories engaged in diagnosis

a) Descriptive summary of the organisational structure and role of the government veterinary laboratory service in particular its relevance to the field *Veterinary Services*.

b) Numbers of veterinary diagnostic laboratories operating in the country:

i) government operated *laboratories*;

ii) private *laboratories* authorised by *Veterinary Authority* for the purposes of supporting official or officially endorsed animal health control or public health testing and monitoring programmes and import and export testing.

c) Descriptive summary of accreditation procedures and standards for private *laboratories*.

d) Human and financial resources allocated to the government veterinary *laboratories*, including staff numbers, graduate and post-graduate qualifications and opportunities for further training.

e) List of diagnostic methodologies available against major *diseases* of farm livestock (including *poultry*).

f) List of related National Reference Laboratories, if any.

g) Details of collaboration with external *laboratories* including international reference *laboratories* and details on numbers of samples submitted.

h) Details of quality control and assessment (or validation) programmes operating within the veterinary laboratory service.

i) Recent published reports of the official veterinary laboratory service which should include details of specimens received and foreign animal disease investigations made.

j) Details of procedures for storage and retrieval of information on specimen submission and results.

k) Reports of independent reviews of the laboratory service conducted by government or private organisations (if available).

l) Strategic and operational plans for the official veterinary laboratory service (if available).

6. Institutes engaged in research

a) Numbers of veterinary research institutes operating in the country:

i) government operated institutes;

ii) private institutes involved in full time research directly related to animal health and welfare, and veterinary public health matters involving production animal species.

b) Summary of human and financial resources allocated by government to veterinary research.

c) Published programmes of future government sponsored veterinary research.

d) Annual reports of the government research institutes.

7. Veterinary legislation, regulations and functional capabilities

a) Animal health and animal welfare and veterinary public health

i) Assessment of the adequacy and implementation of relevant legislation (national or sub-national) concerning the following:

– animal and veterinary public health controls at national frontiers;

– control of endemic animal diseases, including *zoonoses*;

– emergency powers for management of disasters which could have impact on animal health and *animal welfare*, and control of exotic disease *outbreaks*, including *zoonoses*;

– inspection and registration of facilities;

– animal feeding;

– veterinary public health controls of the production, processing, storage and marketing of *meat* for domestic consumption;

– veterinary public health controls of the production, processing, storage and marketing of fish, dairy products and other food of animal origin for domestic consumption;

– registration and use of veterinary pharmaceutical products including vaccines;

– *animal welfare*.

ii) Assessment of ability of *Veterinary Services* to enforce legislation.

b) Export and import inspection

i) Assessment of the adequacy and implementation of relevant national legislation concerning:

– veterinary public health controls of the production, processing, storage and transportation of *meat* for export;

– veterinary public health controls of production, processing, storage and marketing of fish, dairy products and other food of animal origin for export;

– animal health and veterinary public health controls of the export and import of *animals*, animal genetic material, animal products, animal feedstuffs and other products subject to veterinary inspection;

– animal welfare controls at export and import of *animals*;

– animal health controls of the importation, use and bio-containment of organisms which are aetiological agents of animal *diseases*, and of pathological material;

– animal health controls of importation of veterinary biological products including vaccines;

– administrative powers available to *Veterinary Services* for inspection and registration of facilities for veterinary control purposes (if not included under other legislation mentioned above);

– documentation and compliance.

ii) Assessment of ability of *Veterinary Services* to enforce legislation.

8. Animal health, animal welfare and veterinary public health controls

a) Animal health

i) Description of and sample reference data from any national animal disease reporting system controlled and operated or coordinated by the *Veterinary Services*.

ii) Description of and sample reference data from other national animal disease reporting systems controlled and operated by other organisations which make data and results available to *Veterinary Services*.

iii) Description and relevant data of current official control programmes including:

– epidemiological *surveillance* or monitoring programmes;

– officially approved industry administered control or eradication programmes for specific *diseases*.

iv) Description and relevant details of animal disease emergency preparedness and response plans.

v) Recent history of animal disease status:

– animal *diseases* eradicated nationally or from defined sub-national zones in the last ten years;

– animal *diseases* of which the prevalence has been controlled to a low level in the last ten years;

– animal *diseases* introduced to the country or to previously free sub national regions in the last ten years;

– *emerging diseases* in the last ten years;

– animal *diseases* of which the prevalence has increased in the last ten years.

b) Animal welfare

i) Description of major animal welfare issues.

ii) Description of specific official programmes initiated by the *Veterinary Services* to address animal welfare problems.

c) Veterinary public health

i) Food hygiene

– Annual national *slaughter* statistics for the past three years according to official data by species of *animals* (bovine, ovine, porcine, caprine, *poultry*, farmed game, wild game, equine, other).

– Estimate of total annual slaughterings which occur but are not recorded under official statistics.

– Proportion of total national *slaughter* which occurs in registered export establishments, by category of *animal*.

– Proportion of total national *slaughter* which occurs under veterinary control, by category of *animal*.

– Numbers of commercial *fresh meat* establishments in the country which are registered for export by the *Veterinary Authority*:

– *slaughterhouses/abattoir* (indicate species of *animals*);

– cutting or packing plants (indicate *meat* type);

– *meat* processing establishments (indicate *meat* type);

– cold stores.

– Numbers of commercial *fresh meat* establishments in the country approved by other *importing countries* which operate international assessment inspection programmes associated with approval procedures.

– Numbers of commercial *fresh meat* establishments under direct public health control of the *Veterinary Services* (including details of category and numbers of inspection staff associated with these premises).

– Description of the veterinary public health programme related to production and processing of animal products for human consumption (including *fresh meat*, *poultry meat*, *meat products*, game *meat*, dairy products, fish, fishery products, molluscs and crustaceans and other foods of animal origin) especially including details applying to exports of these *commodities*.

– Descriptive summary of the roles and relationships of other official organisations in public health programmes for the products listed above if the *Veterinary Authority* does not have responsibility for those programmes which apply to national production destined to domestic consumption or exports of the *commodities* concerned.

ii) Zoonoses

– Descriptive summary of the numbers and functions of staff of the *Veterinary Authority* involved primarily with monitoring and control of zoonotic diseases.

– Descriptive summary of the role and relationships of other official organisations involved in monitoring and control of *zoonoses* to be provided if the *Veterinary Authority* does not have these responsibilities.

iii) Chemical residue testing programmes

– Descriptive summary of national surveillance and monitoring programmes for environmental and chemical residues and contaminants applied to animal-derived foodstuffs, *animals* and animal feedstuffs.

– Role and function in these programmes of the *Veterinary Authority* and other *Veterinary Services* to be described in summary form.

– Descriptive summary of the analytical methodologies used and their consistency with internationally recognised standards.

iv) Veterinary medicines

– Descriptive summary of the administrative and technical controls involving registration, supply and use of veterinary pharmaceutical products especially including biological products. This summary should include a focus on veterinary public health considerations relating to the use of these products in food-producing animals.

– Role and function in these programmes of the *Veterinary Authority* and other *Veterinary Services* to be described in summary form.

9. Quality systems

a) Accreditation

Details and evidence of any current, formal accreditation by external agencies of the *Veterinary Services* of any components thereof.

b) Quality manuals

Documented details of the quality manuals and standards which describe the accredited quality systems of the *Veterinary Services*.

c) Audit

Details of independent (and internal) audit reports which have been undertaken of the *Veterinary Services* of components thereof.

10. Performance assessment and audit programmes

a) Strategic plans and review

i) Descriptive summary and copies of strategic and operational plans of the *Veterinary Services* organisation.

ii) Descriptive summary of corporate performance assessment programmes which relate to the strategic and operational plans - copies of recent review reports.

b) Compliance

Descriptive summary of any compliance unit which monitors the work of the *Veterinary Services* (or elements thereof).

c) Annual reports of the *Veterinary Authority*

Copies of official annual reports of the national (sub-national) *Veterinary Authority*.

d) Other reports

i) Copies of reports of official reviews into the function or role of the *Veterinary Services* which have been conducted within the past three years.

ii) Descriptive summary (and copy of reports if available) of subsequent action taken on recommendations made in these reviews.

e) Training

i) Descriptive summary of in-service and development programmes provided by the *Veterinary Services* (or their parent Ministries) for relevant staff.

ii) Summary descriptions of training courses and duration.

iii) Details of staff numbers (and their function) who participated in these training courses in the last three years.

f) Publications

Bibliographical list of scientific publications by staff members of *Veterinary Services* in the past three years.

g) Sources of independent scientific expertise

List of local and international universities, scientific institutions and recognised veterinary organisations with which the *Veterinary Services* have consultation or advisory mechanisms in place.

11. Membership of the OIE

State if country is a member of the OIE and period of membership.

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— Text deleted.

Annex 11

CHAPTER 6.8.

MONITORING OF THE QUANTITIES AND USAGE PATTERNS OF ANTIMICROBIAL AGENTS IN FOOD-PRODUCING ANIMALS

EU position

The EU cannot support the adoption of this modified chapter as proposed. An important comment is inserted in the text below that should be taken into account before adoption.

Article 6.8.1.

Definition and purpose

For the purposes of this chapter, therapeutic use of *antimicrobial agents* means the administration of *antimicrobial agents* to *animals* for treating and controlling ~~infectious diseases~~ *infections*.

EU position

The EU does not support replacing the words "infectious diseases" by the word "infection" in the definition of "therapeutic use of antimicrobial agents" in Article 6.8.1.

Indeed, the new wording proposed would imply that administering antimicrobial agents to animals that are infected but do not show clinical signs of disease would be regarded as "therapeutic use", whereas in fact it should be regarded as "prophylactic use" as it would be used to prevent the occurrence of clinical signs. The terms "therapeutic" and "therapy" as commonly defined in dictionaries clearly refer to the treatment or healing of clinical diseases. Furthermore, preventing the spread of infectious diseases is already covered by the word "controlling", which would correspond to a metaphylactic use of antimicrobial agents and which can be accepted by the EU for the purposes of this Chapter of the OIE Code.

The wording highlighted with a coloured background in the first paragraph of Article 6.8.1. should therefore be reverted back to "infectious diseases". This would also be consistent with the wording already adopted by the OIE World Assembly in Article 6.6.1. (The third paragraph of that article reads: "[…] *The OIE recognises the need for access to antimicrobial agents in veterinary medicine: antimicrobial agents are essential for treating and controlling infectious diseases in animals.* […]".)

The purpose of these recommendations is to describe an approach to the monitoring of the quantities of antimicrobial agents used in food-producing animals.

In order to evaluate antimicrobial exposure in food-producing animals, quantitative information should be collected to monitor usage patterns by animal species, antimicrobial agents or class, type of use (therapeutic or non-therapeutic) and route of administration.

Article 6.8.2.

Objectives

The information provided in these recommendations is essential for antimicrobial resistance *risk analyses* and planning purposes and should be read in conjunction with Chapters 6.7. and 6.10. This information is necessary for interpreting antimicrobial resistance surveillance data and can assist in responding to problems of antimicrobial resistance in a precise and targeted way. The continued collection of this basic information will also help to give an indication of trends in the use of *antimicrobial agents* in *animals* over time and potential associations with antimicrobial resistance in *animals*. This information may also assist in *risk management* to evaluate the effectiveness of efforts to ensure responsible and prudent use and mitigation strategies (for example, by identifying changes in veterinary prescribing practices) and to indicate where change of antimicrobial usage practices might be appropriate. The publication of these data is important to ensure transparency and to allow all interested parties to assess trends, to perform *risk assessments* and for *risk communication* purposes.

Article 6.8.3.

Development and standardisation of antimicrobial monitoring systems

Systems to monitor antimicrobial usage consist of the following elements:

1. Sources of antimicrobial data

   a) Basic sources

      Sources of data will vary from country to country. Such sources may include customs, import and export data, manufacturing and sales data.

   b) Direct sources

      Data from *veterinary medicinal product* registration authorities, wholesalers, retailers, pharmacists, *veterinarians*, feed stores, feed mills and pharmaceutical industry associations can be efficient and practical sources. A possible mechanism for the collection of this information is to make the provision of appropriate information by pharmaceutical manufacturers to the regulatory authority one of the requirements of antimicrobial registration.

   c) End-use sources (veterinarians and food animal producers)

      This may be appropriate when basic or direct sources cannot be used for the routine collection of the information or when more accurate and locally specific information is required (such as off label use).

      Periodic collection of this type of information may be sufficient.

      Collection, storage and processing of data from end-use sources should be carefully designed, well managed and have the capability to produce accurate and targeted information.

   d) Other sources

      Non-conventional sources including Internet sales data related to *antimicrobial agents* could be collected where available.

   Member Countries may wish to consider, for reasons of cost and administrative efficiency, collecting medical, food-producing animal, agricultural and other antimicrobial use data in a single programme. A consolidated programme would also facilitate comparisons of animal use with human use data for *risk analysis* purposes and help to promote optimal usage of *antimicrobial agents*.

2. Types and reporting formats of antimicrobial usage data

   a) Type of antimicrobial use data

      The data collected at minimum should be the weight in kilograms of the active ingredient of the antimicrobial(s) used in food-producing animals per year. It is possible to estimate total usage by collecting sales data, prescribing data, manufacturing data, import and export data or any combination of these.

The total number of food-producing animals by species, type of production and their weight in kilograms for food production per year (as relevant to the country of production) is essential basic information.

Information on dosage regimens (dose, dosing interval and duration of the treatment) and route of administration are elements to include when estimating antimicrobial usage in food-producing animals.

b) Reporting formats of antimicrobial use data

The *antimicrobial agents*, classes or sub-classes to be included in data reporting should be based on current known mechanisms of antimicrobial activity and antimicrobial resistance data.

Nomenclature of *antimicrobial agents* should comply with international standards where available.

For active ingredients present in the form of compounds or derivatives, the mass of active entity of the molecule should be recorded. For *antimicrobial agents* expressed in International Units, the factor used to convert these units to mass of active entity should be stated.

The reporting of antimicrobial use data may be further organised by species, by route of administration (specifically in-feed, in-water, injectable, oral, intramammary, intra-uterine and topical) and by type of use (therapeutic or non-therapeutic).

Regarding data coming from end-use sources, further breakdown of data for analysis of antimicrobial use at the regional, local, *herd* and individual *veterinarian* or veterinary practice levels may be possible.

Article 6.8.4.

Interpretation

According to the OIE *risk assessment* guidelines (refer to Chapter 6.10.), factors such as the number or percentage of *animals* treated, treatment regimes, type of use and route of administration are key elements to consider.

When comparing antimicrobial use data over time, changes in the size and composition of animal populations should also be taken into account.

The interpretation and communication of results should take into account factors such as seasonality and disease conditions, animal species and age affected, agricultural systems (e.g. extensive range conditions and feedlots), animal movements, and dosage regimens with *antimicrobial agents*.

— Text deleted.

Annex 12

CHAPTER 8.16.

INFECTION WITH *TRICHINELLA* SPP.

EU position

The EU supports the adoption of this modified chapter.

Article 8.16.1.

General provisions

Trichinellosis is a widely distributed *zoonosis* caused by eating raw or undercooked *meat* from *Trichinella* infected food-producing *animals* or *wildlife*. Given that clinical signs of trichinellosis are not generally recognised in *animals*, the importance of trichinellosis lies exclusively in the *risk* posed to humans and costs of control in *slaughter* populations.

The adult parasite and the larval forms live in the small intestine and muscles (respectively) of many mammalian, avian and reptile host species. Within the genus *Trichinella*, twelve genotypes have been identified, ~~eight~~ nine of which have been designated as species. There is geographical variation amongst the genotypes.

Prevention of *infection* in susceptible species of domestic *animals* intended for human consumption relies on the prevention of exposure of those *animals* to the *meat* and *meat products* of *Trichinella* infected *animals*. This includes consumption of food waste of domestic animal origin, rodents and *wildlife*.

Meat and *meat products* derived from *wildlife* should be considered a potential source of *infection* for humans. Therefore untested *meat* and *meat products* of *wildlife* may pose a public health *risk*.

For the purposes of the *Terrestrial Code*, *infection* with *Trichinella* spp. ~~*infection*~~ is defined as an *infection* of suids or equids by parasites of the genus *Trichinella*.

This chapter provides recommendations for on-farm prevention of *Trichinella infection* in domestic pigs *(Sus scrofa domesticus)*, and safe trade of *meat* and *meat products* derived from suids and equids. This chapter should be read in conjunction with the Codex Alimentarius Code of Hygienic Practice for Meat (CAC/RCP 58-2005) and Guidelines for the control of *Trichinella* spp. in meat of Suidae (CAC/GL 86-2015).

Methods for the detection of *Trichinella infection* in pigs and other animal species include direct demonstration of *Trichinella* larvae in muscle samples. Demonstration of the presence of *Trichinella*-specific circulating antibodies using a validated serological test may be useful for epidemiological purposes.

When authorising the import or transit of the *commodities* covered in this chapter, with the exception of those listed in Article 8.16.2., *Veterinary Authorities* should apply the recommendations in this chapter.

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

Article 8.16.2.

Safe commodities

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

1) hides, skins, hair and bristles;

2) semen, embryos and oocytes.

Annex 12 (contd)

Article 8.16.3.

Measures to prevent infection in domestic pig herds kept under controlled management conditions

1) Prevention of *infection* is dependent on minimising exposure to potential sources of *Trichinella*:

   a) facilities and the surrounding environment should be managed to prevent exposure of pigs to rodents and *wildlife*;

   b) raw food waste of animal origin should not be present ~~at the farm level~~ on pig *establishments* and should not be fed to pigs;

   c) feed should comply with the requirements in Chapter 6.3. and should be stored in a manner to prevent access by rodents and *wildlife*;

   d) a rodent control programme should be in place;

   e) dead *animals* should be immediately removed and disposed of in accordance with Chapter 4.12.;

   f) introduced pigs should originate from *herds* officially recognised as being under controlled management conditions as described in point 2, or from *herds* of a *compartment* with a negligible risk of *Trichinella infection*, as described in Article 8.16.5.

2. The *Veterinary Authority* may officially recognise pig *herds* as being under controlled management conditions if:

   a) all management practices described in point 1 are complied with and recorded;

   b) visits by approved auditors have been made periodically to verify compliance with good management practices described in point 1; the frequency of inspections should be *risk*-based, taking into account historical information, *slaughterhouse* monitoring results, knowledge of established farm management practices and the presence of susceptible *wildlife*;

   c) a subsequent programme of audits is conducted, taking into account the factors described in point b.

Article 8.16.4.

Prerequisite criteria for the establishment of compartments with a negligible risk of *Trichinella* infection in domestic pigs kept under controlled management conditions

Compartments with a negligible risk of *Trichinella infection* in domestic pigs kept under controlled management conditions can only be established in countries, in which the following criteria, as applicable, are met:

1) *Trichinella infection* is notifiable in the whole territory and communication procedures on the occurrence of *Trichinella infection* are established between the *Veterinary Authority* and the public health authority;

2) the *Veterinary Authority* has knowledge of, and authority over, all domestic pigs;

3) the *Veterinary Authority* has current knowledge of the distribution of susceptible species of *wildlife*;

4) an *animal identification* and *animal traceability* system for domestic pigs is implemented in accordance with Chapters 4.1. and 4.2.;

5) *Veterinary Services* have the capability to assess the epidemiological situation, detect the presence of *Trichinella infection* (including genotype, if relevant) in domestic pigs and identify exposure pathways.

Article 8.16.5.

Compartment with a negligible risk of *Trichinella* infection in domestic pigs kept under controlled management conditions

The *Veterinary Authority* may recognise a *compartment* in accordance with Chapter 4.4. as having negligible risk of *Trichinella infection* in domestic pigs kept under controlled management conditions if the following conditions are met:

1) all *herds* of the *compartment* comply with the requirements in Article 8.16.3.

2) Article 8.16.4. has been complied with for at least 24 months;

3) the absence of *Trichinella infection* in the *compartment* has been demonstrated by a *surveillance* programme which takes into account current and historical information, and *slaughterhouse* monitoring results, as appropriate, in accordance with Chapter 1.4.;

4) once a *compartment* is established, a subsequent programme of audits of all *herds* within the *compartment* is in place to ensure compliance with Article 8.16.3.;

5) if an audit identifies a lack of compliance with the criteria described in Article 8.16.3. and the *Veterinary Authority* determines this to be a significant breach of *biosecurity*, the *herd(s)* concerned should be removed from the *compartment* until compliance is re-established.

Article 8.16.6.

Recommendations for the importation of meat or meat products of domestic pigs

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

1) has been produced in accordance with the Codex Code of Hygienic Practice for Meat (CAC/RCP 58-2005);

AND

2) either:

   a) comes from domestic pigs originating from a *compartment* with a negligible risk for *Trichinella infection* in accordance with Article 8.16.5.;

   OR

   b) comes from domestic pigs that tested negative by an approved method for the detection of *Trichinella* larvae;

   OR

   c) was processed to ensure the inactivation of *Trichinella* larvae in accordance with the Codex Guidelines for the control of *Trichinella* spp. in meat of Suidae (CAC/GL 86-2015) ~~the recommendations of the Codex Alimentarius (under study)~~.

Article 8.16.7.

Recommendations for the importation of meat or meat products of wild or feral pigs

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

1) has been produced in accordance with the Codex Code of Hygienic Practice for Meat (CAC/RCP 58-2005);

Annex 12 (contd)

AND

2) either:

a) comes from *wild* or *feral* pigs that tested negative by an approved method for the detection of *Trichinella* larvae;

OR

b) was processed to ensure the inactivation of *Trichinella* larvae in accordance with the Codex Guidelines for the control of *Trichinella* spp. in meat of Suidae (CAC/GL 86-2015). ~~the recommendations of the Codex Alimentarius (under study).~~

Article 8.16.8.

Recommendations for the importation of meat or meat products of domestic equids

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

1) has been produced in accordance with the Codex Code of Hygienic Practice for Meat (CAC/RCP 58-2005);

AND

2) comes from domestic equids that tested negative by an approved method for the detection of *Trichinella* larvae.

Article 8.16.9.

Recommendations for the importation of meat or meat products of wild and feral equids

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

1) has been inspected in accordance with Chapter 6.2.;

AND

2) comes from *wild* or *feral* equids that tested negative by an approved method for the detection of *Trichinella* larvae.

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— Text deleted.

Annex 13

CHAPTER 15.3.

INFECTION WITH *TAENIA SOLIUM* (PORCINE CYSTICERCOSIS)

EU position

The EU supports the adoption of this modified chapter.

Article 15.3.1.

General provisions

~~*Infection* with~~ *Taenia solium* is a zoonotic ~~parasitic *infection*~~ parasite of pigs and occasionally of other animals. *T. solium* is a cestode (tapeworm) that is endemic in large areas of Latin America, Asia and sub-Saharan Africa. The adult cestode occurs in the small intestine of humans (definitive host) causing taeniosis. The larval stage (cysticercus) occurs in striated muscles, subcutaneous tissues and central nervous system of pigs (intermediate hosts), causing cysticercosis. Other suids and dogs can be infected but are not epidemiologically significant. Humans may also become infected with the larval stage through the ingestion of eggs shed in faeces of infected humans. The most severe form of ~~the~~ human infection by the larval stage ~~in humans~~ is neurocysticercosis which causes neurological disorders including seizures (epilepsy) and sometimes death. Cysticercosis, although normally clinically inapparent in pigs, is associated with significant economic losses due to carcass condemnation and decreased value of pigs, and causes a major disease burden in humans.

In humans, taeniosis occurs following ingestion of pig *meat* containing viable cysticerci and can be prevented by avoiding consumption of raw or undercooked contaminated pig *meat*. In humans, cysticercosis occurs following ingestion of *T. solium* eggs and can be prevented by avoiding exposure to *T. solium* eggs through detection and treatment of human tapeworm carriers, community health education, appropriate sanitation, personal hygiene, and good food hygiene. Collaboration between the *Veterinary Authority* and the public health authority is ~~an~~ essential in preventing and controlling *T. solium* transmission.

In pigs, cysticercosis occurs by ingestion of *T. solium* eggs from faeces, or environments contaminated with faeces of humans harbouring adult *T. solium*.

For the purposes of the *Terrestrial Code*, *infection* with *T. solium* is defined as an *infection* of pigs.

The aim of this chapter is to reduce the risk of *infection* with *T. solium* of humans and pigs and to minimise the international spread of *T. solium*. The chapter provides recommendations for prevention, control, and *surveillance* of *infection* with *T. solium* in pigs.

This chapter should be read in conjunction with the Codex Alimentarius Code of Hygienic Practice for Meat (CAC/RCP 58-2005).

When authorising the import or transit of the *commodities* covered in this chapter, with the exception of those listed in Article 15.3.2. *Veterinary Authorities* should apply the recommendations in this chapter.

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

Article 15.3.2.

Safe commodities

When authorising import or transit of the following *commodities* of pigs, *Veterinary Authorities* should not require any *T. solium* related conditions regardless of the status of the animal population of the *exporting country*:

1) processed fat;

2) casings;

3) semi-processed skins which have been submitted to the usual chemical and mechanical processes in use in the tanning industry;

4) bristles, hooves and bones;

5) ~~embryos and~~ semen, embryos and oocytes.

Article 15.3.3.

Measures to prevent and control infection with *T. solium*

The *Veterinary Authority* and other *Competent Authorities* should carry out community awareness and education programmes on the risk factors associated with transmission of *T. solium* emphasising the role of pigs and humans.

The *Veterinary Authority* or other *Competent Authorities* should promote the following measures:

1. Prevention of infection in pigs

   Transmission of *T. solium* eggs from humans to pigs can be avoided by:

   a) preventing the exposure of pigs to environments contaminated with human faeces;

   b) preventing the deliberate use of human faeces as pig feed or the use of pigs as a means of human faeces disposal;

   c) preventing the use of untreated sewage effluent to irrigate or fertilise land to be used by pigs for forage ~~and~~ or for food crops;

   d) ensuring that any treated sewage effluent used to irrigate or fertilise land to be used by pigs for forage or for food crops has been treated in a manner shown to inactivate *T. solium* eggs;

   ~~d~~e) providing adequate toilet and sanitation facilities for people in pig ~~rearing~~ *establishments* to prevent the exposure of pigs and their environment to human faeces.

2. Control of infection in pigs

   a) The *Veterinary Authority* should ensure that all slaughtered pigs are subjected to post-mortem *meat* inspection in accordance with Chapter 6.2., and with reference to Chapter 2.9.5. of the *Terrestrial Manual*.

   b) When cysticerci are detected during post-mortem *meat* inspection:

      i) if ~~20 or more~~ cysticerci are detected in a carcass of a pig in multiple locations (systemic infection), that carcass and its viscera, as well as all pigs from the same *establishment* of origin should be disposed of in accordance with Article 4.12.6.;

      ii) if ~~fewer than 20~~ only localised cysticerci are detected in a carcass of a pig, the meat from that carcass and from all pigs from the same *establishment* of origin should be treated in accordance with Article 15.3.6. or may be disposed of in accordance with Article 4.12.6.;

      iii) an investigation should be carried out by the *Veterinary Authority* and the public health authority to identify the possible source of the *infection* in order to target an intervention;

      iv) post-mortem examination of pigs at *slaughter* from known infected *establishments* should be intensified until sufficient evidence has been obtained indicating that the *infection* has been eliminated from the *establishment*.

   An optimal control programme should include detection and treatment of human tapeworm carriers and control of sewage used for agricultural production.

Article 15.3.4.

Surveillance for infection with *T. solium* in pigs

Communication procedures on the occurrence of *T. solium* should be established between the *Veterinary Authority* and public health authorities.

The *Veterinary Authority* should use information from public health authorities and other sources on human cases of taeniosis or cysticercosis in the initial design and any subsequent modification of *surveillance* programmes.

Surveillance can be conducted by:

1) *meat* inspection at *slaughterhouses/abattoirs*;

2) tongue inspection of live pigs at markets provided that the methods used do not cause injury and avoid unnecessary suffering;

3) other diagnostic tests on live pigs.

The data collected should be used for investigations and for the design or amendment of control programmes as described in Article 15.3.3.

Animal identification and *animal traceability* systems should be implemented in accordance with the provisions of Chapters 4.1. and 4.2.

Article 15.3.5.

Recommendations for the importation of meat and meat products of pigs

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

1) has been produced in accordance with the Codex Code of Hygienic Practice for Meat (CAC/RCP 58-2005);

AND

2) comes from pigs which have been slaughtered in an approved *slaughterhouse*/*abattoir*;

AND

3) either

   a) comes from pigs born and raised in a country, *zone* or *compartment* demonstrated to be free from *T. solium* in accordance with Article 1.4.6.;

   or

   b) comes from pigs which have been subjected to post-mortem inspections for *T. solium* cysticerci with favourable results;

   or

   c) has been processed to ensure the inactivation of the *T. solium* cysticerci in accordance with one of the procedures referred to in Article 15.3.6.

Annex 13 (contd)

Article 15.3.6.

Procedures for the inactivation of *T. solium* cysticerci in meat of pigs

For the inactivation of *T. solium* cysticerci in *meat* of pigs, one of the following procedures should be used:

1) heat treatment to a core temperature of at least ~~80~~ 60°C; or

2) freezing to minus 10°C or less for at least ten days or any time and temperature equivalent.

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— Text deleted.

Annex 14

CHAPTER 7.5.

SLAUGHTER OF ANIMALS

EU position

The EU thanks the OIE for its work. The EU can support the adoption of this chapter's modified article. We do however have a few comments as indicated below for consideration by the OIE.

[Article 7.5.1.]

[Article 7.5.2.]

[Article 7.5.3.]

[Article 7.5.4.]

[Article 7.5.5.]

[Article 7.5.6.]

Article 7.5.7.

Stunning methods

1. 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 equipment is applied correctly;

e) stunned animals are bled out (slaughtered) as soon as possible;

f) animals are not 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. Provision of a manual inspection area and simple intervention like captive bolt or cervical dislocation for *poultry* would help prevent potential *welfare* problems.

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. For a more detailed explanation on the different methods for mechanical *stunning*, see Chapter 7.6. and

Articles 7.6.6., 7.6.7. and 7.6.8. ~~The following diagrams illustrate the proper application of the device for certain species.~~

Signs of correct *stunning* using a mechanical ~~instrument~~ device 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.

Captive bolts powered by cartridges, compressed air or spring can be used for *poultry*. The optimum position for *poultry* species is at a right angle~~s~~ to the frontal surface.

EU comment

The EU asks the OIE to considering making one paragraph of the two previous sentences and the one that follows so that it reads:

"Captive bolts powered by cartridges, compressed air or spring can be used for *poultry*. The optimum position for *poultry* species is at a right angle to the frontal surface. Firing of a captive bolt in accordance with ~~to~~ the manufacturers' instructions should lead to immediate destruction of the skull and the brain and, as a result, immediate *death*."

Justification:

Editorial change: The sentence which follows below is only correct with regard to poultry. It was previously placed next to the diagram on stunning of poultry and obviously relates to stunning of poultry. To avoid confusion on this issue all three sentences should be placed in the same paragraph.

Linguistic correction.

Firing of a captive bolt in accordance with to the manufacturers' instructions should lead to immediate destruction of the skull and the brain and, as a result, immediate *death*.

EU comment

See previous comment.

~~**Firing of a captive bolt in accordance with to the manufacturers' instructions should lead to immediate destruction of the skull and the brain and, as a result, immediate *death***~~

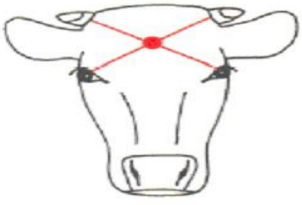
3. […]

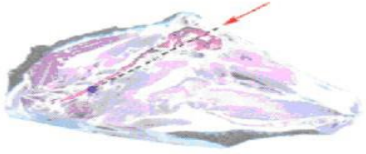
4. […]

5. […]

~~**Figure 1.** 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.~~

~~**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).~~

EU comment
The EU asks the OIE to consider reinserting here the text that is used to introduce each diagram:
"Optimum positions vary between different animals as follows:
Cattle: 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: 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 heavily horned sheep and horned goats is behind the poll, aiming towards the angle of the jaw.
Horses: 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.
Poultry: See previous paragraph."
Justification:
It is important to state that the optimum position varies across species. Therefore it would be good to maintain some reference to this within the text even when guidance is made available on the OIE web page.

~~**Figure 2.** The optimum position for pigs is on the midline just above eye level, with the shot directed down the line of the spinal cord.~~

~~**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).~~

~~**Figure 3.** The optimum position for hornless sheep and goats is on the midline.~~

~~**Sheep**~~

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

Goats

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 5. 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.

Horses

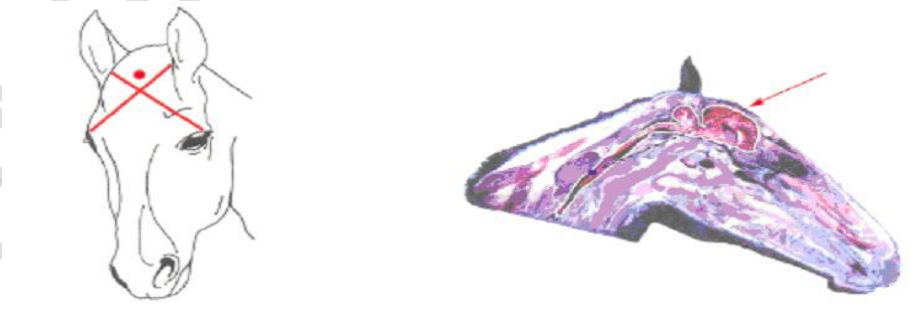


Figure Source: Humane Slaughter Association (2005) Guidance Notes No. 3: Humane Killing of Livestock Using Firearms. Published by the Humane Slaughter Association, The Old School, Brewhouse Hill, Wheathampstead, Hertfordshire AL4 8AN, United Kingdom (www.hsa.org.uk).

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

1) the animal collapses immediately and does not attempt to stand up;

2) the body and muscles of the animal become tonic (rigid) immediately after the shot;

3) normal rhythmic breathing stops; and

4) the eyelid is open with the eyeball facing straight ahead and is not rotated.

Poultry

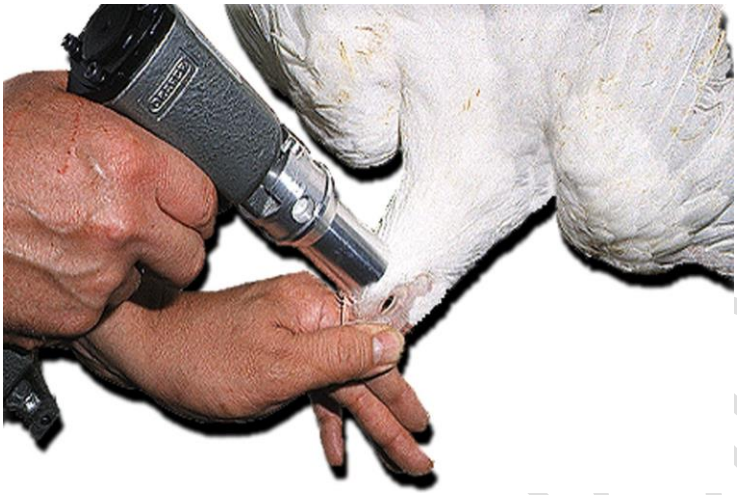


Figure Source: Humane Slaughter Association (2005) Guidance Notes No. 3: Humane Killing of Livestock Using Firearms. Published by the Humane Slaughter Association, The Old School, Brewhouse Hill, Wheathampstead, Hertfordshire AL4 8AN, United Kingdom (www.hsa.org.uk).

Poultry

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).

Captive bolts powered by cartridges, compressed air or spring can be used for *poultry*. The optimum position for *poultry* species is at right angles to the frontal surface.

Firing of a captive bolt according to the manufacturers' instructions should lead to immediate destruction of the skull and the brain and, as a result, immediate *death*.

[Article 7.5.8.]

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—— Text deleted.

Annex 15

CHAPTER 7.6.

KILLING OF ANIMALS FOR DISEASE CONTROL PURPOSES

EU position

The EU thanks the OIE for its work and for taking into account EU comments. The EU can support the adoption of this chapter's modified articles. We do however have comments as indicated below for the OIE to consider in a future revision.

[Article 7.6.1.]

[Article 7.6.2.]

[Article 7.6.3.]

[Article 7.6.4.]

Article 7.6.5.

Table summarising killing methods described in Articles 7.6.6.–7.6.18.

The methods are described in the order of mechanical, electrical and gaseous, not in an order of desirability from an *animal welfare* viewpoint.

Species	Age range	Procedure	Restraint necessary	Animal welfare concerns with inappropriate application	Article reference
Cattle	all	free bullet	no	non-lethal wounding	Article 7.6.6.
	all except neonates	penetrating captive bolt - followed by pithing or bleeding	yes	ineffective stunning non-lethal wounding, regaining of consciousness before death	Article 7.6.7.
	adults only	non-penetrating captive bolt, followed by bleeding	yes	ineffective stunning, regaining of consciousness before ~~killing~~ death	Article 7.6.8.
	calves only	electrical, two-stage application	yes	pain associated with cardiac arrest after ineffective stunning	Article 7.6.10.
	calves only	electrical, single application (method 1)	yes	ineffective stunning	Article 7.6.11.
	all	injection with barbiturates and other drugs	yes	non-lethal dose, pain associated with injection site	Article 7.6.15.

Species	Age range	Procedure	Restraint necessary	Animal welfare concerns with inappropriate application	Article reference
Sheep and goats	all	free bullet	no	non-lethal wounding	Article 7.6.6.
	all except neonates	penetrating captive bolt, followed by pithing or bleeding	yes	ineffective stunning, non-lethal wounding, regaining of consciousness before death	Article 7.6.7.
	all except neonates	non-penetrating captive bolt, followed by bleeding	yes	ineffective stunning, regaining of consciousness before death	Article 7.6.8.
	neonates	non-penetrating captive bolt	yes	non-lethal wounding	Article 7.6.8.
	all	electrical, two-stage application	yes	pain associated with cardiac arrest after ineffective stunning	Article 7.6.10.
	all	electrical, single application (method 1)	yes	ineffective stunning	Article 7.6.11.
	neonates only	CO_2/air mixture	yes	slow induction of unconsciousness, aversiveness of induction	Article 7.6.12.
	neonates only	nitrogen ~~and/~~or inert gas mixed with CO_2	yes	slow induction of unconsciousness, aversiveness of induction	Article 7.6.13.
	neonates only	nitrogen ~~and/~~or inert gases	yes	slow induction of unconsciousness	Article 7.6.14.
	all	injection of barbiturates and other drugs	yes	non-lethal dose, pain associated with injection site	Article 7.6.15.
Pigs	all, except neonates	free bullet	no	non-lethal wounding	Article 7.6.6.

Species	Age range	Procedure	Restraint necessary	Animal welfare concerns with inappropriate application	Article reference
Pigs (contd)	all except neonates	penetrating captive bolt, followed by pithing or bleeding	yes	ineffective stunning, non-lethal wounding regaining of consciousness before death	Article 7.6.7.
	neonates only	non-penetrating captive bolt	yes	non-lethal wounding	Article 7.6.8.
	all~~1~~	electrical, two-stage application	yes	pain associated with cardiac arrest after ineffective stunning. design of the stunning tongs not appropriate for the small head or body of neonates	Article 7.6.10.
	all	electrical, single application (method 1)	yes	ineffective stunning	Article 7.6.11.
	neonates only	CO_2 / air mixture	yes	slow induction of unconsciousness,aversiveness of induction	Article 7.6.12.
	neonates only	nitrogen ~~and/~~or inert gas mixed with CO_2	yes	slow induction of unconsciousness,aversiveness of induction	Article 7.6.13.
	neonates only	nitrogen ~~and/~~or inert gases	yes	slow induction of unconsciousness	Article 7.6.14.
	all	injection with barbiturates and other	yes	non-lethal dose, pain associated with injection site	Article 7.6.15.
Poultry	adults only	penetrating and Non-penetrating captive bolt	yes	ineffective stunning non-lethal wounding, regaining of consciousness before death	Article 7.6.8.
	day-olds and eggs only	Maceration	no	non-lethal wounding, non-immediacy	Article 7.6.9.
	adults only	electrical, single application (method 2)	yes	ineffective stunning	Article 7.6.11.

Species	Age range	Procedure	Restraint necessary	Animal welfare concerns with inappropriate application	Article reference
Poultry (contd)	adults only	electrical, single application, followed by killing (method 3)	yes	ineffective stunning; regaining of consciousness before death	Article 7.6.11.
	all	CO_2 / air mixture Method 1 Method 2	 yes no	slow induction of unconsciousness, aversiveness of induction	Article 7.6.12.
	all	nitrogen ~~and/~~or inert gas mixed with CO_2	yes	slow induction of unconsciousness, aversiveness of induction	Article 7.6.13.
	all	nitrogen ~~and/~~or inert gases	yes	slow induction of unconsciousness	Article 7.6.14.
	all	injection of barbiturates and other drugs	yes	non-lethal dose, pain associated with injection site	Article 7.6.15.
	all	cervical dislocation	no		Point 1 of 7.6.17.
	all	Decapitation	no		Point 2 of 7.6.17.
	adults only	addition of anaesthetics to feed or water, followed by an appropriate killing method	no	ineffective or slow induction of unconsciousness	Article 7.6.16.
Equids	all	free bullet	no	non-lethal wounding	Article 7.6.6.
	all, except neonates	penetrating captive bolt followed by pithing or bleeding	yes	ineffective stunning, non-lethal wounding, regaining of consciousness before ~~killing~~ death	Article 7.6.7
	all	injection of barbiturates and other drugs	yes	non-lethal dose, pain associated with injection site	Article 7.6.15.

EU comment:

The EU thanks the OIE for amending the above table as suggested by the EU. We have however registered that there are now other inconsistencies as a result. We would therefore ask the OIE to review the whole table to ensure a consistent approach irrespective of method used.

Justification:

For example, head only electrical stunning is reversible and we consider that the risk of pre-stun shocks, in a similar way to non-lethal wounding which has been included for penetrative captive bolt method, could be added for this method.

Article 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 animals (high neck shot) and 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 animals.

   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.

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.

5. Conclusion

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

~~**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).~~

EU comment

The EU asks the OIE to consider reinserting here the text that is used to introduce each diagram:

"Optimum positions vary between different animals as follows:

Cattle: 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: 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 heavily horned sheep and horned goats is behind the poll, aiming towards the angle of the jaw.

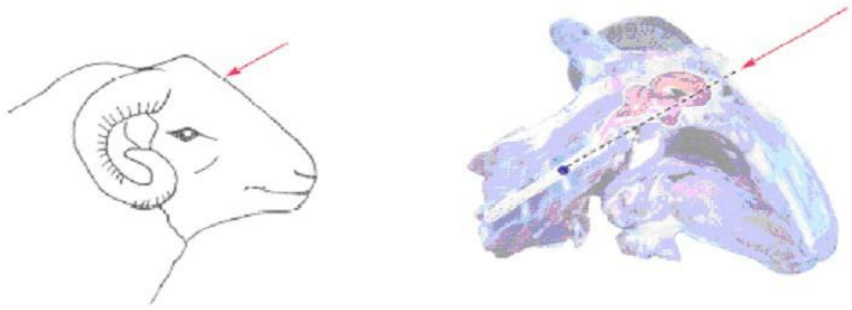
Horses: The optimum position for horses is at right angles to the frontal surface, well above the point where imaginary lines from eyes to ears cross."

[…]

Justification:

It is important to state that the optimum position varies across species. Therefore it would be good to maintain some reference to this within the text even when guidance is made available on the OIE web page.

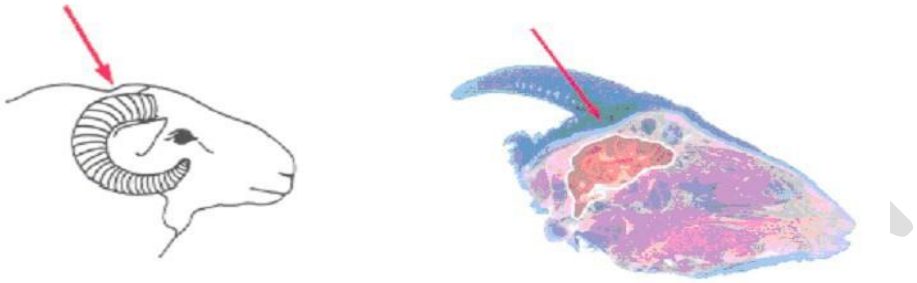
~~**Figure 2.** The optimum position for hornless sheep and goats is on the midline.~~



~~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).~~

~~**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).~~

Article 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. Shooting *poultry* species with the captive bolts results in immediate destruction of the skull and brain, causing *death*. For a detailed description on the use of this method, see Chapter 7.5.

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 *poultry*, cattle, sheep, goats~~,~~ ~~and~~ pigs and equids (except neonates), when followed by pithing or bleeding.

Article 7.6.8.

Non-penetrating captive bolt

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.

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 a right angle~~s~~ 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 neonates.

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

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

[Article 7.6.9.]

Article 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.

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 over 6 weeks of age	220	1.3
Pigs less than 6 weeks of age	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.

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 should 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).

~~Figure 5.~~ ~~Scissor-type tongs.~~

[Article 7.6.11.]

[Article 7.6.12.]

Article 7.6.13.

Nitrogen ~~and/~~or inert gas mixed with CO_2

1. Introduction

CO_2 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%, or <5% for chickens. Various mixtures of CO_2 and nitrogen or an inert gas can be administered to kill birds using Methods 1 and 2 described under Article 7.6.12. Whole house gassing with mixtures of CO_2 and nitrogen, or an inert gas, has not been tested owing to the complex issues presented by mixing gases in large quantities. Such mixtures however do not induce immediate loss of consciousness, therefore the aversiveness of various gas mixtures containing high concentrations of CO_2 and the respiratory distress occurring during the induction phase, are important *animal welfare* considerations.

Pigs and *poultry* appear not to find low concentrations of CO_2 strongly aversive, and a mixture of nitrogen or argon with ≤30% CO_2 by volume and ≤2% O_2 by volume can be used for *killing poultry*, neonatal sheep, goats and pigs.

2. Method 1

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

a) Requirements for effective use

i) *Containers* or apparatus should allow the required gas concentrations to be maintained, and the O_2 and CO_2 concentrations accurately measured during the *killing* procedure.

ii) 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.

iii) Animals should be introduced into the *container* or apparatus after it has been filled with the required gas concentrations (with $\leq$2% O_2), and held in this atmosphere 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.

v) *Containers* or apparatus should not be overcrowded and measures are needed to avoid animals suffocating by climbing on top of each other.

b) Advantages

Low concentrations of CO_2 cause little aversiveness and, in combination with nitrogen or an inert gas, produces a fast induction of unconsciousness.

c) Disadvantages

i) A properly designed *container* or apparatus is needed.

ii) It is difficult to verify *death* while the animals are in the *container* or apparatus.

iii) There is no immediate loss of consciousness.

iv) Exposure times required to kill are considerable.

d) Conclusion

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

3. Method 2

In this method, the crates or modules holding the birds are loaded into a *container* and gas is introduced into the *container* ~~(refer to Figures under Article 7.6.12.)~~. As shown in the example below, each containerised gassing unit (CGU) typically comprises a gas-tight chamber designed to accommodate *poultry* transport crates or a module. The *container* or chamber is fitted with gas lines and diffusers, with silencers, which in turn are connected via a system of manifolds and gas regulators to gas cylinders. There is a hole at the top of the unit to permit displaced air to escape when filling the *container* with gas.

Procedures involved in the operation of CGU includes (a) position the *container* on a level, solid, open ground; (b) connect gas cylinder to the *container* (c) load a module of birds into the *container*, (d) shut and secure the door, (e) deliver the gas to the point where less than 2% by volume of oxygen is found at the top of the *container*, (f) allow time for the birds to become unconscious and die, (g) open the door and allow the gas to be dispersed in air, (h) remove the module, (i) check each drawer for survivors; (j) humanely kill survivors, if any; and (k) dispose carcasses appropriately.

a) Requirements for effective use of containerised gassing units (CGU)

i) The birds should be caught gently and placed in crates or modules of appropriate size and at appropriate *stocking densities* to allow all birds to sit down.

ii) The crates or module of birds should be placed inside the *container* and the door shut only when the operator is ready to administer the gas mixture.

iii) Ensure the *container* door is locked and administer the gas mixture until <2% residual oxygen is achieved at the top of the crates.

iv) An appropriate gas meter should be used to ensure a concentration of oxygen <2% is achieved and maintained until it can be confirmed that the birds have been killed.

v) Sufficient exposure time should be allowed for birds to die before the door is opened. In the absence of a viewing window, which allows direct observation of birds during killing, cessation of vocalisation and wing flapping sounds can be observed by standing close to the *container* and

used to determine the onset of *death* in birds. Remove the crates or modules from the *container* and leave them in the open air.

vi) Each crate or module should be examined and birds checked to ensure they are dead. Dilated pupils and absence of breathing movements indicate *death*.

vii) Any survivors should be humanely killed.

viii) Ducks and geese do not appear to be resilient to the effects of a mixture of 20% carbon dioxide and 80% nitrogen or argon.

b) Advantages

i) The gas mixture is introduced quickly and quietly resulting in less turbulence and disturbance to the birds.

ii) The use of transport crates or modules to move birds minimises handling. Birds should be handled by trained, experienced catching teams at the time of depopulation of the poultry house.

iii) The modules are loaded mechanically into the CGU and a lethal mixture of gas is rapidly introduced into the chamber immediately after sealing.

iv) Mixtures containing up to 20% carbon dioxide in argon are readily available as welding gas cylinders.

v) Birds are exposed to gas in a more uniform manner and they do not smother each other when compared with Method 1.

vi) Two CGU can be operated in tandem and throughputs of up to 4,000 chickens per hour are possible.

vii) The volume of gas required can be readily calculated.

viii) As the units are operated outdoor the gas is dispersed quickly at the end of each cycle by opening the door, improving operators' health and safety.

ix) The system uses skilled catching teams and equipment in daily use by the industry.

x) Metal *containers* can be readily cleansed and disinfected.

c) Disadvantages

i) Requires trained operators, trained catchers, transport modules and a fork lift. However, such equipment and suitable outdoor areas with a hard surface are usually available.

ii) The main limiting factors are speed of catching birds and availability of gas mixtures.

iii) In the absence of a viewing window, visual confirmation of *death* while the birds are still in the *container* is difficult. However, cessation of vocalisation and convulsive wing flapping can be used to determine the onset of *death*.

iv) CGU could be used to kill *poultry* on small to medium farms, e.g. up to 25 thousand birds on a single farm.

d) Conclusion

i) Method 2 is suitable for use in *poultry* and in neonatal sheep, goats and pigs.

ii) Method 2 is suitable for use in *poultry* in a wide range of *poultry* systems providing that these have access to *vehicles* to carry *containers* and equipment.

iii) Animals should be introduced into the *container* or apparatus, which is then sealed and filled as quickly as possible with the gas mixture. A residual oxygen concentration of less than 2% should be achieved and maintained and birds should be held in this atmosphere until *death* is confirmed.

~~Figure source: Department of Clinical Veterinary Science, University of Bristol, United Kingdom.~~

Article 7.6.14.

Nitrogen ~~and/~~or inert gases

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 O_2 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% O_2), 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 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.

f) Personnel performing this method should be trained and knowledgeable in anaesthetic techniques

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~~/~~ and training required may restrict use to *veterinarians*.

d) Contaminated carcasses may present a risk to other *wild animals* or domestic animals.

5. Conclusion

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

[Article 7.6.16.]

[Article 7.6.17.]

Article 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

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 ischaemia 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

i) A delayed ~~and/~~or ineffective bleeding due to convulsions may occur.

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

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— Text deleted.

~~1~~ ~~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 or body.~~

Annex 16

CHAPTER 7.10.

ANIMAL WELFARE AND BROILER CHICKEN PRODUCTION SYSTEMS

[Article 7.10.1.]

[Article 7.10.2.]

[Article 7.10.3.]

Article 7.10.4.

EU position

The EU thanks the OIE for its work. The EU can support the adoption of this chapter's modified article.

Recommendations

1. Biosecurity and animal health

a) Biosecurity and disease prevention

~~*Biosecurity* means a set of measures designed to maintain a *flock* at a particular health status and to prevent the entry (or exit) of specific infectious agents.~~

Biosecurity programmes should be designed and implemented, commensurate with the best possible *flock* health status and current *disease* risk (endemic and exotic or transboundary) that is specific to each epidemiological group of broilers and in accordance with relevant recommendations ~~found~~ in the *Terrestrial Code*.

These programmes should address the control of the major routes for *disease* and pathogen transmission:

i) direct transmission from other *poultry*, domesticated and *wild animals* and humans,

ii) fomites, such as equipment, facilities and *vehicles*,

iii) *vectors* (e.g. arthropods and rodents),

iv) aerosols,

v) water supply,

vi) feed.

Outcome-based measurables: incidence of *diseases*, metabolic disorders and parasitic *infestations*, mortality, performance.

b) Animal health management, preventive medicine and veterinary treatment

~~Animal health management means a system designed to optimise the health and welfare of the broilers. It includes prevention, treatment and control of *diseases* and adverse conditions.~~

Those responsible for the care of broilers should be aware of the signs of ill-health or distress, such as a change in feed and water intake, reduced growth, changes in behaviour, abnormal appearance of feathers, faeces, or other physical features.

If persons in charge are not able to identify the causes of *diseases*, ill-health or distress, or to correct these, or if they suspect the presence of a reportable *disease*, they should seek advice from *veterinarians* or other qualified advisers. Veterinary treatments should be prescribed by a *veterinarian*.

There should be an effective programme for the prevention and treatment of *diseases* consistent with the programmes established by *Veterinary Services* as appropriate.

Vaccinations and treatments should be administered, on the basis of veterinary or other expert advice, by personnel skilled in the procedures and with consideration for the welfare of the broilers.

Sick or injured broilers should be humanely killed as soon as possible. Similarly, killing broilers for diagnostic purposes should be done in a humane manner according to Chapter 7.6.

Outcome-based measurables: incidence of *diseases*, metabolic disorders and parasitic *infestations*, mortality, performance, gait.

2. Environment and management

a) Thermal environment

Thermal conditions for broilers should be appropriate for their stage of development, and extremes of heat, humidity and cold should be avoided. For the growing stage, a heat index can assist in identifying the comfort zones for the broilers at varying temperature and relative humidity levels.

When environmental conditions move outside these zones, strategies should be used to mitigate the adverse effects on the broilers. These may include adjusting air speed, provision of heat, evaporative cooling and adjusting stocking density.

Management of the thermal environment should be checked frequently enough so that failure of the system would be noticed before it caused a welfare problem.

Outcome-based measurables: behaviour, mortality, contact dermatitis, water and feed consumption, performance, feather condition.

b) Lighting

There should be ~~also~~ an adequate period of continuous light.

The light intensity during the light period should be sufficient and homogeneously distributed to allow the broilers to find feed and water after they are placed in the poultry house, to stimulate activity, and allow adequate inspection.

There should also be an adequate period of continuous darkness during each 24-hour period to allow the broilers to rest, to reduce stress and to promote normal behaviour, gait and good leg health.

There should be a period for gradual adjustment to lighting changes.

Outcome-based measurables: gait, metabolic disorders, performance, behaviour, eye condition, injury rate.

c) Air quality

Adequate ventilation is required at all times to provide fresh air, to remove waste gases such as carbon dioxide and ammonia, dust and excess moisture content from the environment.

Ammonia concentration should not routinely exceed 25 ppm at broiler level.

Dust levels should be kept to a minimum. Where the health and welfare of broilers depend on an artificial ventilation system, provision should be made for an appropriate back-up power and alarm system.

Outcome-based measurables: incidence of respiratory *diseases*, metabolic disorders, eye conditions, performance, contact dermatitis and behaviour.

d) Noise

Broilers are adaptable to different levels and types of noise. However, exposure of broilers to sudden or loud noises should be minimised where possible to prevent stress and fear reactions, such as piling. Ventilation fans, feeding machinery or other indoor or outdoor equipment should be constructed, placed, operated and maintained in such a way that they cause the least possible amount of noise.

Location of farms should, where possible, take into account existing local sources of noise.

Outcome-based measurables: daily mortality rate, morbidity, performance, injury rate, fear behaviour.

e) Nutrition

Broilers should always be fed a diet appropriate to their age and genetics, which contains adequate nutrients to meet their requirements for good health and welfare.

Feed and water should be acceptable to the broilers and free from contaminants at a concentration hazardous to broiler health.

The water system should be cleaned regularly to prevent growth of hazardous microorganisms.

Broilers should be provided with adequate access to feed on a daily basis. Water should be available continuously. Special provision should be made to enable young chicks access to appropriate feed and water.

Broilers that are physically unable to access feed or water should be humanely killed as soon as possible.

Outcome-based measurables: feed and water consumption, performance, behaviour, gait, incidence of *diseases*, metabolic disorders and parasitic *infestations*, mortality, injury rate.

f) Flooring, bedding, resting surfaces and litter quality

The floor of a poultry house should preferably be easy to clean and disinfect.

The provision of loose and dry bedding material is desirable in order to insulate the chicks from the ground and to encourage dust bathing and foraging.

Litter should be managed to minimise any detrimental effects on welfare and health. Poor litter quality can lead to contact dermatitis and breast blisters. Litter should be replaced or adequately treated when required to prevent *diseases* in the next *flock*.

Litter quality is partly related to the type of substrate used and partly to different management practices. The type of substrate should be chosen carefully. Litter should be maintained so that it is dry and friable and not dusty, caked or wet. Poor litter quality can result from a range of factors including water spillage, inappropriate feed composition, enteric *infections*, poor ventilation and overcrowding.

If broilers are kept on slatted floors, where a very humid climate precludes the use of other flooring substrates, the floors should be designed, constructed and maintained to adequately support the broilers, prevent injuries and ensure that manure can fall through or be adequately removed.

To prevent injury and keep them warm, *day-old birds* should be placed on an appropriate type of flooring suitable for their size.

If *day-old birds* are housed on litter, before they enter the poultry house, a layer of uncontaminated substrate, such as wood shavings, straw, rice husk, shredded paper, treated used litter should be added to a sufficient depth to allow normal behaviour and to separate them from the floor.

Outcome-based measurables: contact dermatitis, feather condition, gait, behaviour (dust bathing and foraging), eye conditions, incidence of *diseases*, metabolic disorders and parasitic *infestations*, performance.

g) Prevention of feather pecking and cannibalism

Feather pecking and cannibalism are rarely seen in broilers because of their young age. However, management methods, such as reducing light intensity, providing foraging materials, nutritional modifications, reducing stocking density, selecting the appropriate genetic stock should be implemented where feather pecking and cannibalism are a potential problem.

If these management strategies fail, therapeutic beak trimming is the last resort.

Outcome-based measurables: injury rate, behaviour, feather condition, mortality.

h) Stocking density

Broilers should be housed at a stocking density that allows them to access feed and water and to move and adjust their posture normally. The following factors should be taken into account: management capabilities, ambient conditions, housing system, production system, litter quality, ventilation, *biosecurity* strategy, genetic stock, and market age and weight.

Outcome-based measurables: injury rate, contact dermatitis, mortality, behaviour, gait, incidence of *diseases*, metabolic disorders and parasitic *infestations*, performance, feather condition.

i) Outdoor areas

Broilers can be given access to outdoor areas as soon as they have sufficient feather cover and are old enough to range safely. There should be sufficient exit areas to allow them to leave and re-enter the poultry house freely.

Management of outdoor areas is important in partially housed and completely outdoors production systems. Land and pasture management measures should be taken to reduce the risk of broilers being infected by pathogens or infested by parasites. This might include limiting the stocking density or using several pieces of land consecutively in rotation.

Outdoor areas should be placed on well drained ground and managed to minimise swampy conditions and mud.

Outdoor areas should provide shelter for broilers and be free from poisonous plants and contaminants.

Protection from adverse climatic conditions should be provided in completely outdoors systems.

Outcome-based measurables: behaviour, incidence of *disease*, metabolic disorders and parasitic *infestations*, performance, contact dermatitis, feather condition, injury rate, mortality, morbidity.

j) Protection from predators

Broilers should be protected from predators.

Outcome-based measurables: fear behaviour, mortality, injury rate.

k) Choice of broiler strain

Welfare and health considerations~~,~~ should balance any decisions on ~~in addition to~~ productivity and growth rate~~, should be taken into account~~ when choosing a broiler strain for a particular location or production system.

Outcome-based measurables: gait, metabolic disorders, contact dermatitis, mortality, behaviour, performance.

l) Painful interventions

Painful interventions, such as beak trimming, toe trimming and dubbing, should not be routinely practised on broilers.

f therapeutic beak trimming is required, it should be carried out by trained and skilled personnel at as early an age as possible and care should be taken to remove the minimum amount of beak necessary using a method which minimises pain and controls bleeding.

Surgical caponisation should not be performed without adequate pain and *infection* control methods and should only be performed by *veterinarians* or trained and skilled personnel under veterinary supervision.

Outcome-based measurables: mortality, culling and morbidity, behaviour.

m) Handling and inspection

Broilers should be inspected at least daily. Inspection should have three main objectives: to identify sick or injured broilers to treat or cull them, to detect and correct any welfare or health problem in the *flock*, and to pick up dead broilers.

Inspection should be done in such a way that broilers are not unnecessarily disturbed, for example *animal handlers* should move quietly and slowly through the *flock*.

When broilers are handled, they should not be injured or unnecessarily frightened or stressed.

Broilers which have an incurable illness, significant deformity or injury should be removed from the *flock* and killed humanely as soon as possible as described in Chapter 7.6.

Cervical dislocation is an accepted method for killing individual broilers if carried out competently as described in Article 7.6.17.

Outcome-based measurables: behaviour, performance, injury rate, mortality, vocalisation, morbidity.

n) Personnel training

All people responsible for the broilers should have received appropriate training or be able to demonstrate that they are competent to carry out their responsibilities and should have sufficient knowledge of broiler behaviour, handling techniques, emergency killing procedures, *biosecurity*, general signs of *diseases*, and indicators of poor *animal welfare* and procedures for their alleviation.

Outcome-based measurables: all measurables could apply.

o) Emergency plans

Broiler producers should have emergency plans to minimise and mitigate the consequences of natural disasters, *disease outbreaks* and the failure of mechanical equipment. Planning may include the provision of fail-safe alarm devices to detect malfunctions, backup generators, access to maintenance providers, alternative heating or cooling arrangements, ability to store water on farm, access to water cartage services, adequate on farm storage of feed and alternative feed supply and a plan for managing ventilation emergencies.

The emergency plans should be consistent with national programmes established or recommended by *Veterinary Services*. Humane *killing* procedures should be part of the emergency plan.

p) Location, construction and equipment of farms

The location of broiler farms should be chosen to be safe from the effects of fires and floods and other natural disasters to the extent practical. In addition farms should be sited to avoid or minimise *biosecurity* risks, exposure of broilers to chemical and physical contaminants, noise and adverse climatic conditions.

Broiler houses, outdoor areas and equipment to which broilers have access should be designed and maintained to avoid injury or pain to the broilers.

Broiler houses should be constructed and electrical and fuel installations should be fitted to minimise the risk of fire and other hazards.

Broiler producers should have a maintenance programme in place for all equipment the failure of which can jeopardise broiler welfare.

q) On farm harvesting

Broilers should not be subject to an excessive period of feed withdrawal prior to the expected *slaughter* time.

Water should be available up to the time of harvesting.

Broilers that are not fit for *loading* or *transport* because they are sick or injured should be killed humanely.

Catching should be carried out by skilled *animal handlers* and every attempt should be made to minimise stress and fear reactions, and injury. If a broiler is injured during catching, it should be killed humanely.

Broilers should not be picked up by their neck or wings.

Broilers should be carefully placed in the *transport container*.

Mechanical catchers, where used, should be designed, operated and maintained to minimise injury, stress and fear to the broilers. A contingency plan is advisable in case of mechanical failure.

Catching should preferably be carried out under dim or blue light to calm the broilers.

Catching should be scheduled to minimise the time to *slaughter* as well as climatic stress during catching, *transport* and holding.

Stocking density in *transport containers* should suit climatic conditions and maintain comfort.

Containers should be designed and maintained to avoid injury, and they should be cleaned and, if necessary, disinfected regularly.

Outcome-based measurables: behaviour, vocalisation, injury rate, mortality rate at harvesting and on arrival at the *slaughterhouse/abattoir*.

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— Text deleted.

Annex 17

CHAPTER 7.11.

ANIMAL WELFARE AND DAIRY CATTLE PRODUCTION SYSTEMS

EU position

The EU thanks the OIE for its work and for taking some aspects of the EU comments into account. The EU can support the adoption of this modified chapter but does have one comment for consideration by the OIE in a future revision.

Article 7.11.1.

Definition

Dairy cattle production systems are defined as all commercial cattle production systems where the purpose of the operation includes some or all of the breeding, rearing and management of cattle intended for production of milk.

Article 7.11.2.

Scope

This chapter addresses the welfare aspects of dairy cattle production systems.

Article 7.11.3.

Commercial dairy cattle production systems

Dairy cattle in commercial production may be kept in housed or pastured systems, or a combination of both:

1. Housed

   These are systems where cattle are kept on a formed surface, indoors or outdoors, and are fully dependent on humans to provide for basic animal needs such as food, shelter and water. The type of housing will depend on the environment, climatic conditions and management system. The animals may be housed unrestrained or tethered, within this housing system.

2. Pastured

   These are systems where cattle live outdoors, and have some autonomy over diet selection, water consumption and access to shelter. Pastured systems do not involve any housing except that required for milking.

3. Combination systems

   These are systems where cattle are managed in any combination of housed and pasture production systems, either simultaneously, or varied in accordance with weather or physiological state of the cattle.

Article 7.11.4.

Criteria (or measurables) for the welfare of dairy cattle

The following outcome-based criteria, specifically animal-based criteria, can be useful indicators of *animal welfare*. Consideration should also be given to the design of the system and animal management practices. The use of these indicators and their appropriate thresholds should be adapted to the different situations where dairy cattle are managed. These criteria can be considered as a tool to monitor the impact of design and management, given that both of these can affect *animal welfare*.

1. Behaviour

Certain behaviours could indicate an *animal welfare* problem. These include decreased feed intake, altered locomotory behaviour and posture, altered lying time, altered respiratory rate and panting, coughing, shivering and huddling, excessive grooming and the demonstration of stereotypic, agonistic, depressive or other abnormal behaviours.

2. Morbidity rate

Morbidity rates, including for infectious and metabolic *diseases*, lameness, peri-partum and post-procedural complications and injury rates, above recognised thresholds, may be direct or indirect indicators of the *animal welfare* status of the whole *herd*. Understanding the aetiology of the *disease* or syndrome is important for detecting potential *animal welfare* problems. Mastitis, and hoof, reproductive and metabolic diseases are also particularly important animal health problems for adult dairy cows. Scoring systems, such as for body condition, lameness and milk quality, can provide additional information.

Both clinical examination and pathology should be utilised as an indicator of *disease*, injuries and other problems that may compromise *animal welfare*.

3. Mortality and culling rates

Mortality and culling rates affect the length of productive life and, like morbidity rates, may be direct or indirect indicators of the *animal welfare* status. Depending on the production system, estimates of mortality and culling rates can be obtained by analysing ~~the causes of~~ *death* and culling and their temporal and spatial patterns of occurrence. Mortality and culling ~~rates,~~ and their causes, should be recorded regularly, e.g. daily, monthly, annually or with reference to key husbandry activities within the production cycle.

EU comment

The EU asks the OIE to consider the following rephrasing of the final sentence in the above paragraph.

"Mortality and culling, and their causes, when known, should be recorded regularly, e.g. daily, monthly, annually or with reference to key husbandry activities within the production cycle."

Justification:

The causes of mortality in particular are not always known to the person responsible for the dairy cattle. To establish the correct cause would in a number of situations require either necropsy or an examination by a veterinarian. Although this may be appropriate, it is not always possible under practical conditions.

Necropsy is useful in establishing the cause of *death*.

4. Changes in body weight, body condition and milk yield

In growing animals, body weight changes outside the expected growth rate, especially excessive sudden loss, are indicators of poor animal health or *animal welfare*. Future performance, including milk yield and fertility, of replacement heifers can be affected by under- or over-nutrition at different stages of rearing.

In lactating animals, body condition outside an acceptable range, significant body weight change and significant decrease in milk yield may be indicators of compromised welfare.

In non-lactating animals~~, including~~ and bulls, body condition outside an acceptable range and significant body weight change may be indicators of compromised welfare.

5. Reproductive efficiency

Reproductive efficiency can be an indicator of animal health and *animal welfare* status. Poor reproductive performance, compared with the targets expected for a particular breed, can indicate *animal welfare* problems.

Examples may include:

– anoestrus or extended post-partum interval,

– low conception rates,

– high abortion rates,

– high rates of dystocia,

– retained placenta,

– metritis,

– loss of fertility in breeding bulls.

6. Physical appearance

Physical appearance may be an indicator of animal health and *animal welfare*, as well as the conditions of management. Attributes of physical appearance that may indicate compromised welfare include:

– presence of ectoparasites,

– abnormal coat colour, texture or hair loss,

– excessive soiling with faeces, mud or dirt (cleanliness),

– swellings, injuries or lesions,

– discharges (e.g. from nose, eyes, reproductive tract),

– feet abnormalities,

– abnormal posture (e.g. rounded back, head low),

– emaciation or dehydration.

7. Handling responses

Improper handling can result in fear and distress in cattle. Indicators include:

– evidence of poor human-animal relationship, such as excessive flight distance,

– negative behaviour at milking time, such as reluctance to enter the milking parlour, kicking, vocalisation,

– animals striking restraints or gates,

– injuries sustained during handling, such as bruising, lacerations, broken horns or tails and fractured legs,

– animals vocalising abnormally or excessively during restraint and handling,

– disturbed behaviour in the chute or race such as repeated reluctance to enter,

– animals slipping or falling.

8. Complications from common procedures

Surgical and non-surgical procedures may be performed in dairy cattle for facilitating management, improving human safety and *animal welfare* (e.g. disbudding, hoof trimming), and treatment of certain conditions (e.g. displaced abomasum). However, if these procedures are not performed properly, *animal welfare* can be compromised. Indicators of such problems could include:

– post procedure infection, swelling and pain behaviour,

– reduced feed and water intake,

– post procedure body condition and weight loss,

– morbidity and mortality.

Article 7.11.5.

~~**Provisions for good animal welfare**~~ **Recommendations**

Ensuring good welfare of dairy cattle is contingent on several management factors, including system design, environmental management, and animal management practices which include responsible husbandry and provision of appropriate care. Serious problems can arise in any system if one or more of these elements are lacking.

Articles 7.11.6. and 7.11.7. provide recommendations for measures applied to dairy cattle.

Each recommendation includes a list of ~~relevant~~ outcome-based measurables derived from Article 7.11.4. This does not exclude other measures being used where appropriate.

Article 7.11.6.

Recommendations on system design and management including physical environment

~~1. Recommendations on system design and management including physical environment~~

When new facilities are planned or existing facilities are modified, professional advice on design in regards to animal ~~health and~~ welfare and health should be sought.

Many aspects of the environment can impact the ~~health and~~ welfare and health of dairy cattle. These include thermal environment, air quality, lighting, noise, etc.

1.~~a)~~ Thermal environment

Although cattle can adapt to a wide range of thermal environments particularly if appropriate breeds are used for the anticipated conditions, sudden fluctuations in weather can cause heat or cold stress.

a)~~i)~~ Heat stress

The risk of heat stress for cattle is influenced by environmental factors including air temperature, relative humidity, wind speed, animal density (area and volume available per animal), shade availability, animal factors including breed, age, body condition, metabolic rate and stage of lactation, and coat colour and density.

Animal handlers should be aware of the risk that heat stress poses to cattle and of the thresholds in relation to heat and humidity that may require action. As conditions change, routine daily activities that require moving cattle should be amended appropriately. If the risk of heat stress reaches very high levels the *animal handlers* should institute an emergency action plan that gives priority to access to additional water and could include provision of shade, fans, reduction of animal density, and provision of cooling systems as appropriate for the local conditions.

Outcome-based measurables: feed and water intake, behaviour, especially respiratory rate and panting, physical appearance, especially dehydration, morbidity rate, mortality rate, changes in milk yield.

b)~~ii)~~ Cold stress

Protection from extreme weather conditions should be provided when these conditions are likely to create a serious risk to the welfare of cattle, particularly in neonates and young cattle and others that are physiologically compromised. This could be provided by extra bedding and natural or man-made shelters.

During extreme cold weather conditions, *animal handlers* should institute an emergency action plan to provide cattle with shelter, adequate feed and water.

Outcome-based measurables: mortality and morbidity rates, physical appearance, behaviour, especially abnormal postures, shivering and huddling, growth rate, body condition and weight loss.

2.~~b)~~ Lighting

Housed cattle that do not have sufficient access to natural light should be provided with supplementary lighting which follows natural periodicity sufficient for their health and welfare, to facilitate natural behaviour patterns and to allow adequate and safe inspection of the cattle. The lighting should not cause discomfort to the animals. Housed dairy cows should be provided with subdued night time lighting. Entrance to and exit from restraint facilities and their surrounding area should be well lit.

Outcome-based measurables: behaviour, especially altered locomotory behaviour, morbidity, physical appearance.

3.~~c)~~ Air quality

Good air quality and ventilation are important for the health and welfare of cattle and reduce the risk of respiratory discomfort and *diseases*. Air quality is affected by air constituents such as gases, dust and micro-organisms, and is influenced strongly by management and building design in housed systems. Air composition is influenced by animal density, the size of the cattle, flooring, bedding, waste management, building design and ventilation system.

Proper ventilation is important for effective heat dissipation in cattle and to prevent the build-up of effluent gases (e.g. ammonia and hydrogen sulphide), including those from manure and dust in the housing unit. The ammonia level in enclosed housing should not exceed 25 ppm. A useful indicator is that if air quality is unpleasant for humans it is also likely to be a problem for cattle.

Outcome-based measurables: morbidity rate, mortality rate, behaviour, especially respiratory rate or panting, coughing, changes in weight and body condition or growth rate, physical appearance, especially wet coat.

4.~~d)~~ Noise

Cattle are adaptable to different levels and types of noise. However, exposure of cattle to sudden and unexpected noises, including from personnel, should be minimised where possible to prevent stress and fear reactions. Ventilation fans, alarms, feeding machinery or other indoor or outdoor equipment should be constructed, placed, operated and maintained in a manner that minimises noise.

Outcome-based measurables: behaviour especially agitation and nervousness, changes in milk yield.

5.~~e)~~ Flooring, bedding, resting surfaces and outdoor areas

In all production systems cattle need a well-drained and comfortable place to rest. All cattle in a group should have sufficient space to lie down and rest at the same time.

Particular attention should be given to the provisions for areas used for calving. The environment in such areas (e.g. floors, bedding, temperature, calving pen and hygiene) should be appropriate to ensure the welfare of calving cows and new born calves.

In housed systems calving areas should be thoroughly cleaned and provided with fresh bedding between each calving. Group pens for calving should be managed based on the principle 'all in - all out'. The group calving pen should be thoroughly cleaned and provided with fresh bedding between each animal group. The time interval between first and last calving of cows kept in the same group calving pen should be minimised.

Outdoor calving pens and fields should be selected to provide the cow with a clean and comfortable environment.

Floor management in housed production systems can have a significant impact on cattle welfare. Areas that compromise welfare and are not suitable for resting (e.g. places with excessive faecal accumulation, or wet bedding) should not be included in the determination of the area available for cattle to lie down.

Slopes of the pens should allow water to drain away from feed troughs and not pool the pens.

Flooring, bedding, resting surfaces and outdoor yards should be cleaned as conditions warrant, to ensure good hygiene, comfort and minimise risk of diseases and injuries.

In pasture systems, stock should be rotated between fields to ensure good hygiene and minimise risk of diseases and injuries.

Bedding should be provided to all animals housed on concrete. In straw, sand or other bedding systems such as rubber mats, crumbled-rubber-filled mattresses and waterbeds, the bedding should be suitable (e.g. hygienic, non-toxic) and maintained to provide cattle with a clean, dry and comfortable place ~~in~~ on which to lie.

The design of a standing, or cubicle, or free stall, should be such that the animals can stand and lie comfortably on a solid surface (e.g. length, width and height should be appropriate for the size of the largest animal). There should be sufficient room for the animal to rest and to rise adopting normal postures, to move its head freely as it stands up, and to groom itself without difficulty. Where individual spaces are provided for cows to rest, there should be at least one space per cow.

Alleys and gates should be designed and operated to allow free movement of cattle. Floors should be designed to minimise slipping and falling, promote foot health, and reduce the risk of claw injuries.

If a housing system includes areas of slatted floor, cattle, including replacement stock, should have access to a solid lying area. The slat and gap widths should be appropriate to the hoof size of the cattle to prevent injuries.

If cattle have to be tethered whether indoors or outdoors, they should, as a minimum, be able to lie down, stand up, maintain normal body posture and groom themselves unimpeded. Cows kept in tie stall housing should be allowed sufficient untethered exercise to prevent welfare problems. When tethered outdoors they should be able to walk. *Animal handlers* should be aware of the higher risks of welfare problems where cattle are tethered.

Where breeding bulls are in housing systems, care should be taken to ensure that they have sight of other cattle with sufficient space for resting and exercise. If used for natural mating, the floor should not be slatted or slippery.

Outcome-based measurables: morbidity rates, especially lameness and injuries (e.g. hock and knee injuries and skin lesions), behaviour~~,~~ (e.g. ~~especially~~ altered locomotion and posture, altered lying time, grooming and ~~locomotory behaviour~~ (e.g. ~~-~~not using the intended lying areas), changes in weight and body condition, physical appearance (e.g. hair loss, cleanliness score), growth rate.

6.~~f~~) Location, construction and equipment

The impacts of climate and geographical factors on dairy cattle should be evaluated when farms are established. Efforts should be made to mitigate any negative impacts of those factors, including matching dairy breed to location and consideration of alternate sites.

All facilities for dairy cattle should be constructed, maintained and operated to minimise the risk to the welfare of the cattle.

In pasture and combination systems tracks and races between the milking area and fields should be laid out and managed so as to minimise the overall distances walked. Construction and maintenance of tracks and races, including their surface, should minimise any risk to the welfare of the cattle, especially from foot health problems.

Equipment for milking, handling and restraining dairy cattle should be constructed and used in a way that minimises the risk of injury, pain or distress. Manufacturers of such equipment should consider *animal welfare* when designing it and when preparing operating instructions.

Electrified equipment designed to control animal behaviour (e.g. cow trainer) may cause welfare problems if not designed, used and maintained properly.

Electrified fences and gates should be well-designed and maintained to avoid welfare problems, and used only in accordance with manufacturer's instructions.

Where access to an outdoor area, including pasture, is possible, there may be additional benefits to dairy cattle from the opportunity to graze and exercise, especially a decreased risk of lameness.

In all production systems, feed and water provision should allow all cattle to have access to feed and water. Feeding systems should be designed to minimise agonistic behaviour. Feeders and water providers should be easy to clean and properly maintained.

Milking parlours, free stalls, standings, cubicles, races, chutes and pens should be properly maintained and be free from sharp edges and protrusions to prevent injury to cattle.

There should be a separated area where individual animals can be examined closely and which has restraining facilities.

When relevant, sick and injured animals should be treated away from healthy animals. When a dedicated space is provided this should accommodate all the needs of the animal e.g. recumbent animals may require additional bedding or an alternative floors surface.

Hydraulic, pneumatic and manual equipment should be adjusted, as appropriate, to the size of cattle to be handled. Hydraulic and pneumatic operated restraining equipment should have pressure limiting devices to prevent injuries. Regular cleaning and maintenance of working parts is essential to ensure the system functions properly and is safe for the cattle.

Mechanical and electrical devices used in facilities should be safe for cattle.

Dipping baths and spray races used for ectoparasite control should be designed and operated to minimise the risk of crowding and to prevent injury and drowning.

Collecting yards (e.g. entry to the milking parlour) should be designed and operated to minimise stress and prevent injuries and lameness.

The loading areas and ramps, including the slope of the ramp, should be designed to minimise stress and injuries for the animals and ensure the safety of the *animal handlers*, in accordance with Chapters 7.2., 7.3. and 7.4.

Outcome-based measurables: handling response, morbidity rate, especially lameness, mortality rate, behaviour, especially altered locomotory behaviour, injury rate, changes in weight and body condition, physical appearance, growth rate.

7.~~g)~~ Emergency plans

The failure of power, water and feed supply systems could compromise *animal welfare*. Dairy producers should have contingency plans to cover the failure of these systems. These plans may include the provision of fail-safe alarms to detect malfunctions, back-up generators, contact information for key service providers, ability to store water on farm, access to water cartage services, adequate on-farm storage of feed ~~and~~, alternative feed supply, and emergency killing of animals according to chapter 7.6.

Preventive measures for emergencies should be input-based rather than outcome based. Contingency plans should include an evacuation plan and be documented and communicated to all responsible parties. Alarms and back-up systems should be checked regularly.

Article 7.11.7

Recommendations on animal management practices

~~2. Recommendations on animal management practices~~

Good animal management practices are critical to providing an acceptable level of *animal welfare*. Personnel involved in handling and caring for dairy cattle should be competent with relevant experience or training to equip them with the necessary practical skills and knowledge of dairy cattle behaviour, handling, health, *biosecurity*, physiological needs and welfare. There should be a sufficient number of *animal handlers* to ensure the health and welfare of the cattle.

1.~~a)~~ Biosecurity and animal health

a)~~i)~~ Biosecurity and disease prevention

~~For the purpose of this chapter, *biosecurity* means a set of measures designed to maintain a *herd* at a particular health status and to prevent the entry or spread of infectious agents.~~

Biosecurity plans should be designed, implemented and maintained, commensurate with the best possible *herd* health status, available resources and infrastructure, and current disease risk and, for *listed diseases* in accordance with relevant recommendations in the *Terrestrial Code*.

These *biosecurity plans* should address the control of the major sources and pathways for spread of pathogens:

– cattle, including introductions to the *herd*,

– calves coming from different sources,

– other domestic animals, *wildlife*, and pests,

– people including sanitation practices,

– equipment, tools and facilities,

– *vehicles*,

– air,

– water supply, feed and bedding,

– manure, waste and dead stock disposal,

– semen and embryos.

Outcome-based measurables: morbidity rate, mortality rate, reproductive efficiency, changes in weight and body condition, changes in milk yield.

b)~~ii)~~ Animal health management

Animal health management should optimise the physical and behavioural health and welfare of the dairy *herd*. It includes the prevention, treatment and control of *diseases* and conditions affecting the *herd* (in particular mastitis, lameness, reproductive and metabolic diseases).

There should be an effective programme for the prevention and treatment of *diseases* and conditions, formulated in consultation with a *veterinarian*, where appropriate. This programme should include the recording of production data (e.g. number of lactating cows, births, animal movements in and out of the *herd*, milk yield), morbidities, mortalities, culling rate and medical treatments. It should be kept up to date by the *animal handler*. Regular monitoring of records aids management and quickly reveals problem areas for intervention.

For parasitic burdens (e.g. endoparasites, ectoparasites and protozoa), a programme should be implemented to monitor, control and treat, as appropriate.

Lameness can be a problem in dairy cattle. *Animal handlers* should monitor the state of feet ~~hooves and claws,~~ and take measures to prevent lameness and maintain foot health.

Those responsible for the care of cattle should be aware of early specific signs of *disease* or distress (e.g. coughing, ocular discharge, changes in milk appearance, changes in locomotory behaviour), and non-specific signs such as reduced feed and water intake, reduction of milk production, changes in weight and body condition, changes in behaviour or abnormal physical appearance.

Cattle at higher risk of *disease* or distress will require more frequent inspection by *animal handlers*. If *animal handlers* suspect the presence of a *disease* or are not able to correct the causes of *disease* or distress, they should seek advice from those having training and experience, such as *veterinarians* or other qualified advisers, as appropriate.

Vaccinations and other treatments administered to cattle should be carried out by *veterinarians* or other people skilled in the procedures and on the basis of veterinary or other expert advice and with consideration for the welfare of the dairy cattle.

Animal handlers should be competent in identifying and appropriately managing chronically ill or injured cattle, for instance in recognising and dealing with non-ambulatory cattle, especially those that have recently calved. Veterinary advice should be sought as appropriate.

Non-ambulatory cattle should have access to water at all times and be provided with feed at least once daily and milked as necessary. They should be provided shade and protected from predators. They should not be transported or moved unless absolutely necessary for treatment or diagnosis. Such movements should be done carefully using methods that avoid~~ing~~ dragging the animal or ~~excessive~~ lifting it in a way that might exacerbate injuries.

Animal handlers should also be competent in assessing fitness to transport, as described in Chapter 7.3.

In case of *disease* or injury, when treatment has failed or recovery is unlikely (e.g. cattle that are unable to stand up, unaided or refuse to eat or drink), the animal should be humanely killed as soon as possible in accordance with Chapter 7.6.

Animals suffering from photosensitisation should be provided with shade and where possible the cause should be identified.

Outcome-based measurables: morbidity rate, mortality rate, reproductive efficiency, depressive behaviour, altered locomotory behaviour, physical appearance and changes in weight and body condition changes in milk yield.

c)~~iii)~~ Emergency plans for disease outbreaks

Emergency plans should cover the management of the farm in the face of an emergency *disease outbreak*, consistent with national programmes and recommendations of *Veterinary Services* as appropriate.

2.~~b)~~ Nutrition

The nutrient requirements of dairy cattle have been well defined. Energy, protein, mineral and vitamin content of the diet are major factors determining milk production and growth, feed efficiency, reproductive efficiency, and body condition.

Cattle should be provided with access to an appropriate quantity and quality of balanced nutrition that meets their physiological needs.

Where cattle are maintained in outdoor conditions, short term exposure to climatic extremes may prevent access to nutrition that meets their daily physiological needs. In such circumstances the *animal handler* should ensure that the period of reduced nutrition is not prolonged and that extra food and water supply are provided if welfare would otherwise be compromised.

Animal handlers should have adequate knowledge of appropriate body condition scoring systems for their cattle and should not allow body condition to go outside an acceptable range in accordance with breed and physiological status.

Feedstuffs and feed ingredients should be of satisfactory quality to meet nutritional needs and stored to minimise contamination and deterioration. Where appropriate, feed and feed ingredients should be tested for the presence of substances that would adversely impact on animal health. Control and monitoring of animal feed should be implemented in accordance with relevant recommendations in Chapter 6.3.

The relative risk of digestive upset in cattle increases as the proportion of grain increases in the diet or if quality of silage is poor. Grain or new diets should be introduced slowly and palatable fibrous feed such as silage, grass and hay, should be available *ad libitum* to meet metabolic requirements in a way that promotes digestion and ensures normal rumen function.

Animal handlers should understand the impact of cattle size and age, weather patterns, diet composition and sudden dietary changes in respect to digestive upsets and their negative consequences (displaced abomasum, sub-acute ruminal acidosis, bloat, liver abscess, laminitis). Where appropriate, dairy producers should consult a cattle nutritionist for advice on ration formulation and feeding programmes.

Particular attention should be paid to nutrition in the last month of pregnancy, with regards to energy balance, roughage and micronutrients, in order to minimise calving and post-calving diseases and body condition loss.

Liquid milk (or milk replacer) is essential for healthy growth and welfare of calves. However, feeding calves all-liquid diets as the sole source of nutrition after 4-6 weeks of age limits the physiological development of the rumen. Calves over two weeks old should have a sufficient daily ration of fibrous feed and starter ration (concentrate) to promote rumen development and to reduce abnormal oral behaviours.

Dairy producers should become familiar with potential micronutrient deficiencies or excesses for production systems in their respective geographical areas and use appropriately formulated supplements where necessary.

All cattle, including unweaned calves, need an adequate supply and access to palatable water that meets their physiological requirements and is free from contaminants hazardous to cattle health.

Outcome-based measurables: mortality rates, morbidity rates, behaviour, especially agonistic behaviour (at the feeding area), changes in weight and body condition, reproductive efficiency, changes in milk yield, growth rate and vocalisation.

3.~~c)~~ Social environment

Management of cattle should take into account their social environment as it relates to *animal welfare*, particularly in housed systems. Problem areas include: agonistic and oestrus activity, mixing of heifers and cows, feeding cattle of different size and age in the same pens, decreased space allowance, insufficient space at the feeder, insufficient water access and mixing of bulls.

Management of cattle in all systems should take into account the social interactions of cattle within groups. The *animal handler* should understand the dominance hierarchies that develop within different groups and focus on high risk animals, such as sick or injured, very young, very old, small or large size for cohort group, for evidence of agonistic behaviour and excessive mounting behaviour. The *animal handler* should understand the risks of increased agonistic interactions between animals, particularly after mixing groups.

When other measures have failed, cattle that are expressing excessive agonistic activity or excessive mounting behaviour should be removed from the group.

Animal handlers should be aware of the *animal welfare* problems that may be caused by mixing of inappropriate groups of cattle and provide adequate measures to minimise them (e.g. introduction of heifers in a new group, mixing of animals at different production stages that have different dietary needs).

Horned and non-horned cattle should not be mixed because of the risk of injury.

Outcome-based measurables: behaviour, especially lying times, physical injuries and lesions, changes in weight and body condition, physical appearance (e.g. cleanliness), lameness scores, changes in milk yield, morbidity rate, mortality rate, growth rate, vocalisation.

4.~~d)~~ Space allowance

Cattle in all production systems should be offered adequate space for comfort and socialisation.

Insufficient and inadequate space allowance may increase the occurrence of injuries and have an adverse effect on growth rate, feed efficiency, and behaviour such as locomotion, resting, feeding and drinking.

Space allowance should be managed taking into account different areas for lying, standing and feeding. Crowding should not adversely affect normal behaviour of cattle and durations of time spent lying.

All cattle should be able to rest simultaneously, and each animal lie down, stand up and move freely. In growing animals, space allowance should also be managed such that weight gain is not adversely affected. If abnormal behaviour is seen, corrective measures should be taken, such as increasing space allowance, redefining the areas available for lying, standing and feeding.

In pastured systems, stocking density should depend on the available feed and water supply and pasture quality.

Outcome-based measurables: behaviour, especially agonistic or depressive behaviour, morbidity rate, mortality rate, changes in weight and body condition, physical appearance, changes in milk yield, parasite burden, growth rate.

5.~~e)~~ Protection from predators

Cattle should be protected from predators.

Outcome-based measurables: mortality rate, morbidity rate (injury rate), behaviour, physical appearance.

6.~~f)~~ Genetic selection

Welfare and health considerations, in addition to productivity, should be taken into account when choosing a breed or subspecies for a particular location or production system.

In breeding programmes, attention should be paid to criteria conducive to the improvement of cattle welfare, including health. The conservation and development of genetic lines of dairy cattle, which limit or reduce animal welfare problems, should be encouraged. Examples of such criteria include nutritional maintenance requirement, disease resistance and heat tolerance.

Individual animals within a breed should be selected to propagate offspring that exhibit traits beneficial to animal health and welfare by promoting robustness and longevity. These include resistance to infectious and production related *diseases*, ease of calving, fertility, body conformation and mobility, and temperament.

Outcome-based measurables: morbidity rate, mortality rate, length of productive life, behaviour, physical appearance, reproductive efficiency, lameness, human-animal relationship, growth rate, body condition outside an acceptable range.

7.~~g)~~ Artificial insemination, pregnancy diagnosis and embryo transfer

Semen collection should be carried out by a trained operator in a manner that does not cause pain or distress to the bull and any teaser animal used during collection and in accordance with Chapter 4.6.

Artificial insemination and pregnancy diagnosis should be performed by a competent operator in a manner that does not cause pain or distress ~~by a competent operator~~.

Embryo transfer should be performed under an epidural or other anaesthesia by a trained operator, preferably a *veterinarian* or a *veterinary para-professional* and in accordance with the provisions of Chapter 4.7. and Chapter 4.8.

Outcome-based measurables: behaviour, morbidity rate, reproductive efficiency.

8.~~h)~~ Dam and sire selection and calving management

Dystocia is a welfare risk to dairy cattle. Heifers should not be bred before they reach the stage of physical maturity sufficient to ensure the health and welfare of both dam and calf at birth. The sire has a highly heritable effect on final calf size and as such can have a significant impact on ease of calving. Sire selection for embryo implantation, insemination or natural mating, should take into account the maturity and size of the female.

Pregnant cows and heifers should be managed during pregnancy so as to achieve an appropriate body condition range for the breed. Excessive fatness increases the risk of dystocia and metabolic disorders during late pregnancy or after parturition.

Cows and heifers should be monitored when they are close to calving. Animals observed to be having difficulty in calving should be assisted by a competent handler as soon as possible after they are detected. When a caesarean section is required, it must be carried out by a *veterinarian*.

Outcome-based measurables: morbidity rate, mortality rate (cow and calf), reproductive efficiency, especially rate of dystocia, retained placenta and metritis, body condition.

9.~~i)~~ Newborn calves

Calving aids should not be used to speed the birthing process, only to assist in cases of dystocia, and should not cause undue pain, distress, or further medical problems.

Newborn calves are susceptible to hypothermia. The temperature and ventilation of the birthing area should consider the needs of the newborn calf. Soft, dry bedding and supplemental heat can help prevent cold stress.

Receiving adequate immunity from colostrum generally depends on the volume and quality of colostrum ingested, and how soon after birth the calf receives it.

Animal handlers should ensure that calves receive ~~sufficient~~ colostrum of a satisfactory quality, ~~preferably from their own dam,~~ ~~and~~ within 24 hours of birth, and in sufficient quantity, to provide passive immunity. Colostrum is most beneficial if received during the first six hours after birth. ~~Where~~ When there is risk of disease transfer from the dam, colostrum from a healthy cow should be used. ~~Where possible, calves should continue to receive colostrum or equivalent for at least five days after birth.~~

Recently born calves should not be transported until the navel is dry, and after which time any transport required should be carried out in accordance with Chapter 7.3.

Calves should be handled and moved in a manner which minimises distress and avoids pain and injury.

Outcome-based measurables: physical appearance, mortality rate, morbidity rate, growth rate.

10.~~j)~~ Cow-calf separation and weaning

Different strategies to separate the calf from the cow are utilised in dairy cattle production systems. These include early separation (usually within 48 hours of birth) or a more gradual separation (leaving the calf with the cow for a longer period so it can continue to be suckled). Separation is stressful for both cow and calf.

For the purposes of this chapter, weaning means the change from a milk-based diet to a fibrous diet and the weaned calf no longer receives milk in its diet. This change should be made gradually and calves should be weaned only when their ruminant digestive system has developed sufficiently to enable them to maintain growth, health and good welfare.

Dairy cattle producers should seek expert advice on the most appropriate time and method of weaning for their type of cattle and production system.

Outcome-based measurables: morbidity rate, mortality rate, behaviour after separation (vocalisation, activity of the cow and calf), physical appearance, changes in weight and body condition, growth rate.

11.~~k)~~ Rearing of replacement stock

Young calves are at particular risk of thermal stress. Special attention should be paid to management of the thermal environment (e.g. provision of additional bedding, nutrition or protection to maintain warmth and appropriate growth).

Individual calf-housing may facilitate~~s~~ monitoring of health of very young calves and minimise~~s~~ the risk of disease spread~~.~~, but ~~Replacement~~ replacement stock should then be reared in groups. Animals in groups should be of similar age and physical size.

Whether reared individually or in group pens, each calf should have enough space to be able to turn around, rest, stand up and groom comfortably and see other animals.

Replacement stock should be monitored for cross-sucking and appropriate measures taken to prevent this occurring (e.g. provide sucking devices, revise or modify feeding practices, provide other environmental enrichments).

Particular attention should be paid to the nutrition, including trace elements, of growing replacement stock to ensure good health and that they achieve an appropriate growth curve for the breed and farming objectives.

Outcome-based measurables: morbidity rate, mortality rate, behaviour, especially cross-sucking, altered grooming and lying behaviours, injuries, physical appearance, changes in weight and body condition, growth rate.

12.~~l)~~ Milking management

Milking, whether by hand or machine, should be carried out in a calm and considerate manner in order to avoid pain and distress. Special attention should be paid to the hygiene of personnel, the udder and milking equipment. All cows should be checked for abnormal milk at every milking.

Milking machines, especially automated milking systems, should be used and maintained in a manner which minimises injury to teats and udders. Manufacturers of such equipment should provide operating instructions that consider *animal welfare*.

A regular milking routine should be established relevant to the stage of lactation and the capacity of the system.

Animal handlers should regularly check the information provided by the milking system and act accordingly to protect the welfare of the cows.

Special care should be paid to animals being milked for the first time. They should be familiarised with the milking facility prior to giving birth.

Long waiting times before and after milking can lead to health and welfare problems (e.g. lameness, reduced time to eat). Management should ensure that waiting times are minimised.

Outcome-based measurables: morbidity rate (e.g. udder health, milk quality), behaviour, changes in milk yield, physical appearance (e.g. lesions).

13.~~m)~~ Painful husbandry procedures

Husbandry practices are routinely carried out in cattle for reasons of management, *animal welfare* and human safety. Those practices that have the potential to cause pain should be performed in such a way as to minimise any pain and stress to the animal. Such procedures should be performed at as early an age as possible or using anaesthesia or analgesia under the recommendation or supervision of a *veterinarian*.

Options for enhancing *animal welfare* in relation to these procedures include: ceasing the procedure and addressing the need for the operation through management strategies; breeding cattle that do not require the procedure; or replacing the current procedure with a non-surgical alternative that has been shown to enhance *animal welfare*.

a)~~i)~~ Disbudding and dehorning

Horned dairy cattle are commonly disbudded or dehorned in order to reduce animal injuries and hide damage, improve human safety, reduce damage to facilities and facilitate transport and handling. The selection of polled cattle is preferable to dehorning.

Performing disbudding at an early age is preferred, rather than dehorning older cattle.

Thermal cautery of the horn bud by a trained operator with proper equipment is the recommended method in order to minimise post-operative pain. This should be done at an appropriate age before the horn bud has attached to the skull.

Guidance from a *veterinarian* or *veterinary para-professional* as to the optimum method and timing for the type of cattle and production system should be sought. The use of anaesthesia and analgesia are strongly recommended when performing disbudding, and should always be used when dehorning. Appropriate restraint systems and procedures are required when disbudding or dehorning.

Other methods of disbudding include: removal of the horn buds with a knife and the application of chemical paste to cauterise the horn buds. Where chemical paste is used, special attention should be paid to avoid chemical burns to other parts of the calf or to other calves. This method is not recommended for calves older than two weeks.

Operators should be trained and competent in the procedure used, and be able to recognise the signs of pain and complications that may include excessive bleeding or sinus infection.

Methods of dehorning when horn development has commenced involve the removal of the horn by cutting or sawing through the base of the horn close to the skull.

b)~~ii)~~ Tail docking

Tail docking does not improve the health and welfare of dairy cattle and therefore it is not recommended. As an alternative, trimming of tail hair should be considered where maintenance of hygiene is a problem.

c)~~iii)~~ Identification

Ear-tagging, ear-notching, tattooing, branding and radio frequency identification devices (RFID) are methods of permanently identifying dairy cattle. The least invasive approach should be adopted whichever method is chosen (e.g. the least number of ear tags per ear and the smallest notch practical). It should be accomplished quickly, expertly and with proper equipment.

Freeze branding and branding with a hot iron should be avoided where alternative identification methods exist (e.g. electronic identification or ear-tags). When branding is used, the operator should be competent in procedures used and be able to recognise signs of complications.

Identification systems should be established also in accordance with Chapter 4.1.

Outcome-based measurables: morbidity rate (post-procedural complications), abnormal behaviour, vocalisation, physical appearance.

14.~~n)~~ Inspection and handling

Dairy cattle should be inspected at intervals appropriate to the production system and the risks to the health and welfare of the cattle. Lactating cows should be inspected at least once a day. Some animals should be inspected more frequently, for example, neonatal calves, cows in late gestation, newly weaned calves, cattle experiencing environmental stress and those that have undergone painful husbandry procedures or veterinary treatment.

Dairy cattle identified as sick or injured should be given appropriate treatment at the first available opportunity by competent *animal handlers*. If *animal handlers* are unable to provide appropriate treatment, the services of a *veterinarian* should be sought.

Recommendations on the handling of cattle are also found in Chapter 7.5. In particular handling aids that may cause pain and distress (e.g. electric goads) should be used only in extreme circumstances and provided that the animal can move freely. Dairy cattle should not be prodded in sensitive areas including the udder, face, eyes, nose or ano-genital region. Electric prods should not be used on calves (see also point 3 of Article 7.3.8.).

Where dogs are used as an aid for cattle herding they should be properly trained. *Animal handlers* should be aware that presence of dogs can stress the cattle and cause fear and should keep them under control at all times. The use of dogs is not appropriate in housed systems, collection yards or other small enclosures where the cattle cannot move freely away.

Cattle are adaptable to different visual environments. However, exposure of cattle to sudden movement or changes in visual contrasts should be minimised where possible to prevent stress and fear reactions.

Electroimmobilisation should not be used.

Outcome-based measurables: handling responses, morbidity rate, mortality rate, behaviour, especially altered locomotory behaviour and vocalisation.

15.~~o)~~ Personnel training

All people responsible for dairy cattle should be competent in accordance with their responsibilities and should understand cattle husbandry, animal handling, milking routines, reproductive management techniques, behaviour, *biosecurity*, signs of *disease*, and indicators of poor *animal welfare* such as stress, pain and discomfort, and their alleviation.

Competence may be gained through formal training or practical experience.

Outcome-based measurables: handling responses, morbidity rate, mortality rate, behaviour, reproductive efficiency, changes in weight and body condition, changes in milk yield.

16.~~p)~~ Disaster management

Plans should be in place to minimise and mitigate the effect of disasters (e.g. earthquake, fire, drought, flooding, blizzard, hurricane). Such plans may include evacuation procedures, identifying high ground, maintaining emergency feed and water stores, destocking and humane *killing* when necessary.

In times of drought, animal management decisions should be made as early as possible and these should include a consideration of reducing cattle numbers.

Humane *killing* procedures for sick or injured cattle should be part of the disaster management plan.

Reference to emergency plans can also be found in point~~s~~ ~~7~~1 ~~g)~~ and ~~2a) iii)~~ of Article 7.11.~~5~~6 and point 1 c) of Article 7.11.7.

17.~~c)~~ Humane killing

For sick and injured cattle a prompt diagnosis should be made to determine whether the animal should be treated or humanely killed.

The decision to kill an animal humanely and the procedure itself should be undertaken by a competent person.

Reasons for humane *killing* may include:

– severe emaciation, weak cattle that are non-ambulatory or at risk of becoming non ambulatory;

– non-ambulatory cattle that will not stand up, refuse to eat or drink, have not responded to therapy;

– rapid deterioration of a medical condition for which therapies have been unsuccessful;

– severe, debilitating pain;

– compound (open) fracture;

– spinal injury;

– central nervous system *disease*;

– multiple joint *infections* with chronic weight loss;

– calves that are premature and unlikely to survive, have a debilitating congenital defect, or otherwise unwanted; and

– as part of disaster management response.

For a description of acceptable methods for humane *killing* of dairy cattle see Chapter 7.6.

— Text deleted.

Annex 18

DRAFT CHAPTER 7.X.

WELFARE OF WORKING EQUIDS

EU position

The EU thanks the OIE for its work and for taking several EU comments into account. The EU can support the adoption of this chapter. We do however have several comments as indicated below which we ask the OIE to consider in a future revision.

Article 7.X.1.

~~**Preamble**~~ **Introduction**

In many countries, working equids, used for transport and traction, contribute directly and indirectly to households' livelihoods and benefit communities as a whole. Working equids may be of direct or indirect use in production and commercial activities.

~~More specifically~~ Specifcally, they contribute to agricultural production and food security by transporting, for instance, water and fodder for other livestock, firewood and other daily needs to the homestead~~,~~ and agricultural products to the market~~:~~. ~~they~~ They provide draught power for agricultural work ~~such as ploughing, harrowing and seeding, weeding~~ and transport~~:~~. ~~they~~ They may supply manure ~~and, in some cases~~, *milk*, *meat* and hides for household use or income (FAO, 2014). ~~Working equids may be of direct or indirect use in production and commercial activities.~~

~~Working equids may be of direct or indirect use in commercial activities such as taxi services, construction, tourism and transporting goods. They can also be rented out and provide an income for the equid's owner and a small business opportunity for the hirer (FAO, 2014). In the case of the latter there can potentially be an increased *animal welfare* risk.~~

~~Finally, working equids relieve the physical burden of women and children and less able people in transport of domestic needs; they may strengthen social relationships within extended families and communities through sharing working animals at times of need, for example during ploughing and harvesting seasons. They transport people to health centres and medical supplies to remote areas and may also form an important part of weddings or ceremonial occasions (FAO, 2014) (The Brooke, 2014).~~

The welfare of these working equids is often poor ~~and this may be as a result of~~ because their ~~ownership~~ owners lack ~~by poor and marginalised communities who are unable to sufficiently~~ sufficient resources to meet their needs~~.~~ or ~~who~~ have insufficient knowledge of the appropriate care of equids. Certain working contexts~~,~~ such as working in construction industries or in harsh environments, may present a particular risk to their welfare ~~such as working within construction industries~~ (e.g. brick kilns).

Article 7.X.2.

~~**Scope and definition**~~

This chapter applies to ~~the following working animals:~~ horses, donkeys and mules ~~and donkeys~~ that ~~which~~ are destined, used for ~~and~~ or retired from ~~for~~ traction ~~and~~, transport~~, for~~ and generation of income ~~generation as well as domestic use (non-commercial work)~~. Equids used in sports or competitions, leisure ~~riding~~ activities, production of biopharmaceuticals or research are excluded.

EU comment

The EU asks the OIE to confirm that horses kept primarily for the purpose of meat production are excluded from the scope.

For the purposes of this chapter, harness means all parts of the driving harness, saddle, bridle and bit that are used ~~work~~ to control the working equid, act as a braking system when pulling a cart, hold loads in place and transfer power to attached carts or agricultural implements.

Article 7.X.3.

Responsibilities ~~and competencies~~

All ~~those~~ organisations with ~~a~~ defined ~~responsibility~~ responsibilities as outlined below should have personnel with the requisite knowledge and skill to perform their duties.

1. Veterinary Authority

The *Veterinary Authority* is ~~the~~ responsible for implementation of animal health and welfare legislations, policies and programmes. However, ~~In~~ in the case of working equids, the responsibility may be shared with other government agencies, ~~and~~ institutions and relevant stakeholders ~~as listed below and including but is not limited to those responsible for agriculture and transport~~.

2. Other government agencies

The responsibilities of other government agencies will depend on the range of working equid uses and contexts.

For example those agencies responsible for regulating industrial and construction activities ~~brick kilns~~, whether for environmental or labour compliance, may also have a responsibility for the working equids involved in the industry.

Particularly in urban areas, the transport or other responsible agency may have legislative authority in dealing with traffic circulation and have a role to play in ensuring a safe environment for working equids as well as other road users.

Environmental protection agencies may regulate and enforce measures to prevent working equids from accessing ~~rubbish or garbage sites or other potential~~ sources of contamination ~~(such as agricultural chemicals or cadavers)~~.

The agency responsible for public health may have legislative authority in dealing with *zoonos~~i~~es* ~~such as glanders~~.

Education authorities have a responsibility in schools and ~~through~~ agricultural, *veterinary para-professional* ~~para-veterinary~~ and veterinary training institutions.~~;~~ ~~appropriate~~ Appropriate education and training ~~can~~ will prevent many welfare problems ~~from occurring~~.

3. 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 with regard to aspects of transport, agriculture, public health, environmental health and inspection, and compliance activities including those in relation to animal health measures ~~quarantine~~ and responsibility for abandoned and stray animals.

In many countries local government agencies are responsible for the development and enforcement of legislation relating to equine drawn carts and carried loads in traffic, *animal identification* (registration), licensing and disposal of dead animals.

4. Private ~~sector~~ veterinarians

~~The private~~ Private ~~sector~~ *veterinarians* are responsible for providing services and advice to working equid owners or handlers and ~~can~~ play an important role in *disease surveillance* because they may be the first to see an equid suffering from a *notifiable disease*. ~~The private sector *veterinarians* should follow the procedure established by the *Veterinary Authority* for reporting a suspected *notifiable disease*. Private sector *veterinarians*.~~ They may also play a role (often in liaison with the police or other local authorities) in dealing

with cases of neglect that can lead to welfare problems.

EU comment

The EU asks the OIE to consider replacing "can" with "will" in the final sentence of the above paragraph:

"They may also play a role (often in liaison with the police or other local authorities) in dealing with cases of neglect that ~~can~~ will lead to welfare problems."

Justification:

Cases of neglect will always lead to welfare problems (physical or mental). It is thus more appropriate in this case to use will.

~~The private *veterinarians* should have competence in clinical examination, diagnosis and, treatment, preventive procedures such as *vaccination* (which may include contracted services from the government in the case of certain *diseases*), *animal identification*, nutrition, and management advice provision, surgical procedures and *euthanasia*.~~ Two-way communication between the private ~~sector~~ *veterinarians* and *Veterinary Authority*, often via the medium of a veterinary professional organisation, is important and the *Veterinary Authority* is responsible for setting up appropriate mechanisms for this interaction.

Private *veterinarians* may also have a responsibility in supervising and coordination of *veterinary para-professionals* involved in delivering animal health services.

5. Non-governmental organisations

Relevant non-governmental organisations (NGOs) and intergovernmental organisations should understand the role of working equids and may help to collect and provide information to support policy formulation, to advocate ~~for~~ and promote health and welfare of working equids.

Local NGOs are potential partners of the *Veterinary Services* in the development and implementation of working equid health and welfare programmes.

NGOs may also contribute, together with *veterinarians* and *Competent Authorities*, in educating the public in the importance of *animal welfare* of working equids.

6. Working equid owners and users

Owners and users are ultimately responsible for the welfare of their working equids by ensuring their animals' "five freedoms" (Article 7.1.2). ~~should ensure that the welfare of the equid, including behavioural needs, is respected and the equid is protected, as far as possible, from injuries, harm, neglect and infectious *diseases* (e.g. through *vaccination* and parasite control). Provision of appropriate feed, water and shelter is also a responsibility of the equid owner~~.

Article 7.X.4.

Criteria or measurables for the welfare of working equids

~~Although there is no single measure of *animal welfare*, focusing on issues that improve animal health and cater for the needs of working equids will bring about improvements in *animal welfare* in practice and ensure that legislators can make evidence-based decisions (Dawkins, 2006).~~

The following outcome-based measurables can be useful indicators of *animal welfare*. The use of these indicators and the appropriate thresholds should be adapted to the different situations where working equids are used.

1. Behaviour

Presence or absence of certain equine behaviours could indicate an *animal welfare* problem, including fear, depression or pain. ~~Non-specific behavioural indicators of pain include aggression, restlessness, agitation, a reluctance to move and a lowered head carriage. Other behaviours have been well documented (at least for horses) for abdominal, limb and dental pain (Ashley *et al.*, 2005)~~. Behaviours differ between ~~donkeys,~~ horses, donkeys and mules and a good understanding of normal behaviour of each species is required.

Some behaviours may not be uniquely indicative of one type of problem; they may be exhibited for a variety of ~~different welfare~~ causes. Depression, apathy, dullness and lethargy in equids that are ~~usually~~ normally active and alert can be indicative of a welfare problem. Changes in eating or drinking patterns may indicate a welfare problem, especially a decreased feed intake. This might also be an indicator of dental problems, poor feed quality or even feed contamination.

EU comment

The EU asks the OIE to consider replacing "can" with "are" in the second sentence of the above paragraph:

"Depression, apathy, dullness and lethargy in equids that are usually normally active and alert ~~can be~~ are indicative of a welfare problem."

Justification:

These symptoms are always an indication of a welfare problem. It is thus more appropriate in this case to use are.

Behaviours indicating discomfort or pain:

- Head pressing, teeth grinding, grunting, food dropping, and inability to eat normally. Such behaviours may indicate disease ~~process~~ or pain.
- Depression, circling, foot pawing, flank watching, inability to stand up, rolling. Such behaviour may indicate abdominal or other discomfort.
- Disturbance of ground or bedding. Such behaviours may indicate disease ~~process~~, abdominal pain, malnutrition.

EU comment

The EU asks the OIE to consider inserting "or" in the above bullet point:

"Disturbance of ground or bedding. Such behaviours may indicate disease, abdominal pain~~,~~ or malnutrition."

Justification:

Linguistic

- Weight shifting, foot pawing, reluctance to move or abnormal movement. Such behaviours may indicate leg, foot, spinal or abdominal pain.
- Head shaking or avoidance of head contact. Such behaviours may indicate head, ear or ocular discomfort.
- Itching, rubbing, self-inflicted abrasions. Such behaviours may indicate skin problems~~, or~~ parasites.

EU comment

The EU asks the OIE to consider reinserting "or" in the above bullet point:

"Itching, rubbing, self-inflicted abrasions. Such behaviours may indicate skin problems, or parasites."

Justification:

It is unclear why 'or' has been deleted as skin problems and parasites are different issues. Also for linguistic purposes it should be included.

- Restlessness, agitation and anxiety, rigid stance and reluctance to move, lowered head carriage, fixed stare and dilated nostrils, clenched jaw, aggression and reluctance to be handled, may indicate non-specific pain in horses. In donkeys, these behaviours are more subtle and may not be recognised;

- Vocalisation, rolling, kicking at abdomen, flank watching and stretching may indicate abdominal pain in horses. In donkeys, dullness and depression;
- Weight-shifting, limb guarding, abnormal weight distribution, pointing, hanging and rotating limbs, abnormal movement and reluctance to move may indicate limb and foot pain in horses. These signs are more subtle in donkeys, although repeated episodes of lying down are reportedly more indicative;
- Headshaking, abnormal bit behaviour, altered eating, anorexia and quidding may indicate head and dental pain (Ashley *et al.*, 2005).

Behaviours indicating fear or anxiety:

- Unusual ~~Avoidance~~ avoidance of humans, especially when handlers or objects associated with their handling come close;
- A reluctance by the working equids to engage in their use for traction or transport or even a cessation and aggressive behaviour, especially when fitting equipment or loading is undertaken.

Behaviours indicating stress:

- Oral stereotypies: crib biting, aerophagia ("wind sucking");
- Locomotive stereotypies: stable walking, weaving.

EU comment

The EU asks the OIE to consider adding other indicators while also sectioning the paragraph as some behaviours are the result of long term problems while others are a temporary occurrence:

"Chronic

- Oral stereotypies: crib biting, aerophagia ("wind sucking")

- Locomotive stereotypies: stable walking, weaving

Temporary

- Abnormal vocalisation, agitation and defecation"

Justification:

Both of the first stereotypies mentioned are indicators of chronical/long term stress, usually resulting from an inadequate living environment and not just after "a busy day at work". It is therefore suggested to highlight this.

The new indicators which are proposed to be added are all usual indicators of short term stress when occurring abnormally.

Scientific references:

Behavioural and physiological responses to stabling in naive horses, 2005

E.J. Harewood, BAppSc (Hons), C.M. McGowan, BVSc, DipVetClinStud, PhD

The effect of two different housing conditions on the welfare of young horses stabled for the first time, 2008

E. Kathalijne Visser, Andrea D. Ellis ,Cornelis G. Van Reenen

2. Morbidity

Morbidity, including incidence of *disease*, lameness, injuries or post-procedural complications, may be a direct or indirect indicator of the *animal welfare* status.

Understanding the aetiology of the *disease* or syndrome is important for detecting potential *animal welfare* problems. Scoring systems, such as those used to score lameness and body condition, can provide additional information.

EU comment

The EU asks the OIE to consider replacing "can" with "will" in the second sentence of the above paragraph:

"Scoring systems, such as those used to score lameness and body condition, ~~can~~ will provide additional information."

Justification:

Scoring systems will usually provide additional information.

~~Post-mortem examination is useful to establish causes of *death*. Both clinical and post-mortem pathology may be utilised as indicators of *disease*, injuries and other problems that may compromise *animal welfare*.~~

3. Mortality

Mortality, like morbidity, may be a direct or indirect indicator of the *animal welfare* status. Depending on the context, causes of mortality should be investigated ~~including~~ as well as temporal and spatial patterns of mortality and possible ~~relation~~ relationship ~~associated~~ with husbandry and handling practices. Necropsy is useful in establishing the cause of *death*.

~~4.~~ ~~Body condition~~

~~Poor or changing body condition may be an indicator of compromised animal health and welfare and scoring systems help provide objectivity (Kay G., Pearson R.A. & Ouassat M. (2004); Pearson R. A. & Ouassat M., 1996; Carroll C. L. & Huntington P. J., 1988).~~

4~~5~~. Body condition and ~~Physica~~l physical appearance

Poor or changing body condition or physical appearance may be an indicator of compromised animal welfare and health and scoring systems help to provide objectivity (Kay G., Pearson R.A. & Ouassat M. (2004); Pearson R. A. & Ouassat M., 1996; Carroll C. L. & Huntington P. J., 1988).

Observation of physical appearance ~~will~~ often provides an indication of animal welfare and health. Attributes of physical appearance that may indicate compromised welfare include:

- feet or limb abnormalities,
- wounds or injuries,
- dehydration ~~(measured by drinking behaviour)~~ or signs of heat stress,
- abnormal discharges,
- presence of parasites,
- abnormal coat~~, texture~~ or hair loss,
- excessive soiling with faeces, mud or dirt,
- ~~emaciation~~ emaciation,
- ~~abnormal behaviour, postures and gait.~~

5~~6~~. Handling responses

Poor human-animal interactions can lead to or be caused by improper handling. This may include ~~inappropriate~~ ~~poor~~ bad driving and inappropriate restraint methods, ~~such as~~ or the ~~inappropriate~~ misuse of whips and sticks, and can result in fear and distress.

Indicators ~~could~~ include:

– aversive or apathetic responses to fitting of equipment and loads,

– defensive responses from the equid to the owner or user such as threatening facial expressions, kicking, biting and avoiding human contact.

– ~~injuries to animals resulting from improper handling.~~

EU comment

The EU does not understand the reason for deleting the final bullet point. We would therefore ask the OIE to consider reinserting it:

"Injuries to animals resulting from improper handling."

Justification:

It would be a valuable indicator as injuries due to improper handling do occur. This is quite well documented.

6~~7~~. Complications due to management practices

Some management practices, such as castration and hoof care, are commonly performed in working equids ~~for improving animal performance~~, to ~~facilitating~~ facilitate handling~~,~~ and ~~improving~~ improve human safety and *animal welfare*.

Working equids are shod for two main reasons; to prevent hoof wear and to improve performance. Many equids cope well without shoes and, if they are coping well, are best unshod. However, poor hoof care and farriery predispose~~s~~ the working equid to injury and infection, and can result in changes to the size, shape and function of the hoof. Untreated abnormalities of the foot can create long-term problems in other parts of the leg and body due to change in gait and weight bearing.

~~They should be accomplished quickly, expertly and with the proper equipment~~. If ~~these~~ ~~such~~ management practices ~~procedures~~ such as these are not performed properly, *animal welfare* ~~can~~ may be compromised.

Indicators of such problems ~~could~~ include:

– post-procedure *infection* and swelling;

– post-procedure lameness;

– myiasis;

– behaviour indicating pain or fear;

– mortality.

It is important to note that some ~~"management~~ practices~~"~~ are not based on evidence and are inherently bad for welfare. Evidence of firing, nasal slitting, lampas cutting and harmful substances applied to ~~put on~~ wounds should be identified as indicators of poor welfare.

7~~8~~. Lameness ~~(Gait)~~

Traditionally, lameness has been defined as any alteration of the horse's gait. In addition, lameness can ~~be~~ manifest in such ways as a change in attitude or performance. These abnormalities can be caused by pain in the neck, withers, shoulders, back, loin, hips, legs or feet. Identifying the source of the problem is essential ~~to~~ for proper treatment (AAEP, 2014). Lameness or gait abnormalities are the most common ~~presenting~~ signs of working equids ~~to~~ seen by *veterinarians*. Various scoring systems are available to assess the degree of lameness ~~Ninety to ninety-nine per cent of working equids may have hoof and limb problems~~ (Burn *et al.*, 2010; ~~Pritchard *et al.*, 2005~~).

Indicators of such problems ~~could~~ include:

– hoof conformation abnormalities;

– unequal weight bearing;

– hoof and pastern axis and angles;

– ~~lameness grades: there are various gait or lameness scoring systems,~~; ~~an example is one developed by the American Association of Equine Practitioners (AAEP).~~

~~The scale ranges from zero to five, with zero being no perceptible lameness, and five being most extreme:~~

~~0: Lameness not perceptible under any circumstances.~~

~~1: Lameness is difficult to observe and is not consistently apparent, regardless of circumstances (e.g. under saddle, circling, inclines, hard surface, etc.).~~

~~2: Lameness is difficult to observe at a walk or when trotting in a straight line but consistently apparent under certain circumstances (e.g. weight-carrying, circling, inclines, hard surface, etc.).~~

~~3: Lameness is consistently observable at a trot under all circumstances.~~

~~4: Lameness is obvious at a walk.~~

~~5: Lameness produces minimal weight bearing.~~

~~9~~8. Fitness to work

Fitness to work is ~~defined at~~ the state or condition of being physically sound and healthy, especially as a result of exercise and proper nutrition, to perform work well (Saunders Comprehensive Veterinary Dictionary, 3 ed. Elsevier). Various factors such as the animal's age, breed or physiological state (e.g. pregnancy) may influence its fitness to work.

EU comment

The EU asks the OIE to consider also including "mentally" in the first sentence so that it reads:

"Fitness to work is the state or condition of being physically and mentally sound and healthy, especially as a result of exercise and proper nutrition, to perform work well."

Justification:

Even if the equid is physically sound it will not be fit to work if it is also depressed. As indicators have been included that relate to mental health such as being apathetic, it is relevant here to take account of mental health.

Indicators of an equid's inability to carry out the work demanded of it include the presence of heat stress, lameness, poor body condition or weight loss, harness related wounds and aversive behavioural responses to, for example, harness or equipment fitting.

Article 7.X.5.

Recommendations

Articles 7.X.~~6~~7. to 7.X.1~~3~~4. provide recommendations for measures applied to working equids.

Each recommendation includes a list of relevant outcome-based measurables derived from Article 7.X.4. This does not exclude other measures being used ~~where~~ when appropriate.

Article 7.X.6.

~~Nutrition, and feeding~~ Feeding and provision of watering

1. Feeding

~~Working~~ ~~equids~~ Equids are natural grazers that eat ~~little and~~ small amounts often. Their natural diet is mainly grasses, which have a high roughage content. Horses in particular should be ~~provided~~ fed frequently with a predominantly fibre-based diet: either grass, hay or a suitable and safe alternative in order to mimic their natural feeding pattern as closely as possible.

Energy, fibre, protein, mineral (including trace minerals) and vitamin contents in the diet of working equids, their balance, safety, digestibility and availability are major factors determining the ~~traction~~ power of the animals, their growth and overall productivity and their health and welfare (FAO, 2014; Pearson, 2005).

Working equids should be provided with access to an appropriate quantity of balanced and safe feed, ~~and water which is safe (edible and with no biological, chemical and physical contaminants) and~~ of adequate quality to meet their specific physiological and working needs. In case of feed shortages, the *animal handler* should ensure that the period of reduced feeding is as short as possible and that mitigation strategies are implemented if welfare and health are at risk of being compromised (NRC, 2007).

EU comment

The EU asks the OIE to consider also the following rephrasing of the first sentence in the above paragraph:

"Working equids should be provided with access to an appropriate quantity of balanced and safe feed, of adequate quality to meet their specific physiological and working needs, especially taking into account variations in temperature, e.g. cold weather."

Justification:

The guidance for adequate feed in cold weather conditions has been deleted in the section on shelter. We think it is important to highlight this element in the feeding section, even if strictly speaking it is covered by the word "specific".

If supplementary feed is not available, steps should be taken to avoid starvation, including *slaughter*, sale or relocation of the animals, or humane *killing*.

~~Working equids need some of their nutrient requirements to be met by fresh, green forage. For this purpose, owners~~ Owners and handlers should allow working equids ~~them~~ to forage whenever possible and allow for an adequate number of working breaks to allow the animals to eat (Heleski *et al.*, 2010). Cut green forage should be provided when grazing is not possible. Long fibre forage is important and should be provided when adequate ~~as well as~~ green forage ~~and should also be provided even when green forage~~ is not available. ~~Long fibre hay is better than chopped forage to prevent ulcers~~.

Inadequate diets and feeding systems ~~that~~ may contribute to *diseases*, stress, discomfort or to abnormal behaviour in working ~~animals~~ equids and should be avoided. *Animal handlers* should be aware ~~of the importance~~ of the animals' nutritional needs and consult an expert for advice on ration formulation and feeding programmes when needed.

2. Provision of water

~~However, the~~ The most important nutrient for the welfare of working equids is water (Heleski *et al.*, 2010). Working equids need regular and adequate ~~supply and~~ access to palatable, safe water that meets their physiological~~,~~ and work~~, and environmental~~ requirements which may vary ~~(e.g. increased water need in hot weather)~~.

Outcome-based measurables: behaviour, morbidity, mortality~~, and morbidity~~ ~~rates~~, ~~behaviour~~, ~~changes in weight and~~ body condition and physical appearance, and fitness to work~~, dehydration (as measured by drinking behaviour)~~, ~~signs of heat stress~~.

Article 7.X.7.

~~Shelter: homestead housing, workplace shelter, environmental considerations, protection from predators~~

Effective shelter should be provided for working equids both in the resting and working environments. Shelter should provide protection against adverse weather conditions and against predators and injury as well as good ventilation and the ability to rest comfortably. Resting space should be dry, clean and large enough for the equid to lie down, get up and turn around easily ~~comfortably and turn round~~.

1. Heat stress

Heat stress is a common condition in working equids ~~which are often working~~ in hot, humid environments and *animal handlers* should be aware of the risk that heat stress poses. Equid owners and handlers should be aware of how to prevent it through provision of appropriate shade or shelter along with sufficient drinking water and avoiding work at extreme high temperatures (The Brooke, 2013). Owners may also be trained in effective treatment of hyperthermia as timely veterinary assistance may not be available.

Behaviours which indicate heat stress include increased respiratory rate and effort; flared nostrils; increased head movement and lack of response to the environment (Pritchard et al., 2006)

Outcome-based measurables: ~~largely~~ behaviour~~al~~, morbidity, mortality, body condition and physical appearance and fitness to work ~~including: increased respiratory rate and effort; flared nostrils; increased head movement and lack of response to environment (Pritchard *et al.*, 2006)~~.

2. Cold

Protection from extreme cold weather conditions should be provided when these are likely to create a serious risk to the welfare of equids, particularly of neonates and young animals and others that are physiologically compromised. Such a protection could be provided by extra bedding, blankets or ~~natural or man-made~~ shelter ~~structures~~. Care ~~must~~ should be taken that, in an attempt to protect against the cold, ventilation and air quality are not compromised. ~~*Animal handlers* should also ensure that equids have access to adequate feed and water during cold weather~~ (The Brooke ~~WEVM~~, 2013).

Behaviour which indicates suffering from cold stress includes shivering and huddling together.

Outcome-based measurables: behaviour, mortality ~~rates~~, and body condition and physical appearance~~, behaviour including abnormal postures and huddling~~.

3. Protection ~~against~~ from predators and injury

~~Good shelter is required to keep~~ Working equids should be kept safe from predators and from road accidents, which are ~~a~~ common occurrences if equids are left free to roam. If working equids are housed alongside ~~other domestic livestock~~ horned cattle, care ~~must~~ should be taken to protect them from injury ~~by horned cattle~~(The Brooke ~~WEVM~~, 2013). Enclosures used should be structurally sound and free of sharp edges, protrusions and other features that could cause injury.

Outcome based measurables: behaviour ,morbidity ~~(injury rate) and,~~ mortality ~~rates~~, body condition and physical appearance and lameness~~, behaviour~~.

Article 7.X.8.

~~Disease and injury management~~ Management~~: management~~ of ~~endemic~~ disease~~, infectious disease, work-related wounds~~ and injuries~~, planning for disease outbreaks, health service provision~~

1. Biosecurity ~~and disease prevention~~

~~For the purpose of this chapter, biosecurity means a set of measures designed to maintain an equid population or *herd* at a particular health status and to prevent the entry or spread of infectious agents.~~ *Biosecurity plans* should be designed~~, promoted with, and implemented by, stakeholders~~, commensurate with the desired health status of the equid population or *herd* and current disease risk. ~~and for *listed diseases*, in accordance with relevant recommendations of the *Terrestrial Code*~~. These *biosecurity plans* should be promoted with stakeholders for effective implementation and should address the control of the major sources and pathways for spread of pathogens by:

a) equids,

b) other *animals* and ~~disease vectors~~ *vectors*,

c) people,

d) equipment ~~(e.g. harnessing, handling and grooming equipment, feeding utensils),~~

e) *vehicles*,

f) air,

g) water supply,

h) feed.

Outcome-based measurables: morbidity ~~rate~~, mortality ~~rate~~, ~~reproductive efficiency,~~ changes in body condition and physical appearance.

2. Animal health management

~~Animal health management means a system designed to optimise the physical and behavioural health and welfare of the working equid. It includes the prevention, treatment and control of *diseases* and conditions affecting the individual animal and *herd*, including the recording of illnesses, injuries, mortalities and medical treatments where appropriate.~~

~~There should be an~~ ~~effective~~ Effective national programmes for the prevention and treatment of working equid *diseases* and conditions require ~~with~~ clear roles and responsibilities to be defined for official and private animal health service personnel as well as for owners.

Owners and handlers of working equids should be aware of signs of ill-health, *disease*, distress and injuries. If they suspect the presence of disease and are not able to manage it, they should seek advice from *veterinarians* or other qualified persons.

~~Those responsible for the care of working equids should be aware of the signs of ill-health or distress, such as reduced feed and water intake, changes in weight and body condition, changes in behaviour or abnormal physical appearance.~~

~~Working equids at higher *risk* of *disease* or distress will require more frequent inspection by *animal handlers*. If *animal handlers* suspect the presence of a disease or are not able to correct the causes of *disease* or distress they should seek advice from those having training and experience, such as *veterinarians* or other qualified advisers.~~

~~*Vaccinations* and other treatments administered to equids should be undertaken by people skilled in the procedures and on the basis of veterinary or other expert advice.~~

~~*Animal handlers* should have experience in recognising and managing chronically ill or injured equids, including those that are non-ambulatory.~~

Non-ambulatory working equids should have access to feed and water at all times ~~and be provided with concentrated feed at least once daily and hay or forage *ad libitum*~~. They should not be transported or moved

unless absolutely necessary for treatment or diagnosis. Such movements should be done carefully using methods that ~~avoiding~~ avoid dragging or excessive lifting.

When treatment is attempted, equids that are unable to stand ~~up~~ unaided and refuse to eat or drink should be euthanised in accordance with ~~according to the methods indicated in~~ Chapter 7.6., as soon as recovery is deemed unlikely.

Outcome-based measurables: morbidity ~~rate~~, mortality ~~rate, reproductive efficiency~~, behaviour~~,~~ body condition and physical appearance~~, and changes in body condition~~.

~~Health is a major component of the welfare of an animal, as an animal in poor health is necessarily in a state of decreased well-being. Health may be assessed by:~~

~~a) The general appearance of the equid~~

~~This is a simple to evaluate and revealing parameter, it suffices to observe the posture, and demeanour of the animal, its body condition, and the appearance of its coat.~~

~~b) The absence of injury~~

~~A wounded animal is suffering. Pain from wounds decreases welfare. Injuries may result from inappropriate external factors; they may result from a poorly adapted environment (e.g. hobble~~,~~ bit wounds or harness wounds), they may also be indicative of poor human-animal interactions.~~

~~c) The absence of disease~~

~~Evolution of *diseases*: *disease* patterns change with time and in working equids, overt clinical signs of infectious disease may often be difficult to detect. More commonly seen are multi-factorial syndromes or conditions involving multiple pathogens as well as environmental and management factors.~~

~~d) The effects of stress~~

~~Stress has a deleterious effect on the immune system; a high incidence of disease may be indicative of too much stress.~~

Article 7.X.9.

Handling ~~and driving practice, handling facilities, personnel expertise and training, mutilations~~ and ~~other~~ management practices~~

Management practices should be accomplished expertly and with the proper equipment and pain relief if appropriate. Painful husbandry procedures should be performed under the recommendation or supervision of a *veterinarian.*

EU comment

The EU asks the OIE to consider including a clause on tail-docking in the above paragraph so that it reads:

"Management practices should be accomplished expertly and with the proper equipment and pain relief if appropriate. Painful husbandry procedures should be performed under the recommendation or supervision of a *veterinarian*. Tail docking in equids is not recommended."

Justification:

Tail docking should not be performed. It is a painful procedure and serves no practical or safety purpose, and it deprives the equid of the possibility to sufficiently drive away flies. The proposed wording is similar to that of the OIE dairy cattle chapter.

Drivers and handlers should be trained to acquire good management ~~practice~~ skills.

Poor management practices include bad handling, inappropriate restraint such as too tight tethering or hobbling, the working of animals that are unfit or immature, poor housing that does not protect the equids from adverse weather conditions ~~(heat stress)~~, inadequate handling equipment, excessive number of working hours, ~~being~~ underfeeding, lack of access to water, lack of resting periods, working under heat stress, ~~overloads~~ overloading, beating or whipping and some traditional practices ~~such as firing or, nostril slitting~~.

~~Some traditional beliefs encourage unsafe, non-effective and inhumane handling of working equids. Firing is carried out in the mistaken belief that it will cure problems such as lameness or respiratory disease and nostrils may be slit in an attempt to increase airflow in hot climates~~. *Competent Authorities* and v*eterinarians* ~~have a role in~~ should ~~educating~~ educate owners and handlers of working equids to cease ~~these~~ unsafe, ~~non-effective~~ ineffective and inhumane ~~inappropriate and ineffective~~ practices and also ~~in encouraging~~ encourage good management and handling skills.

~~Education of *veterinarians* on working equid health, handling, use and management is currently inadequately covered in most veterinary curricula and training programmes for drivers and operators and this should be addressed if such people are to fulfil their responsibility to train others.~~

Working equids should not be kept confined indoors for long periods.

Working ~~Equids~~ equids should not be tethered or hobbled continuously ~~permanently; they should not be hobbled for continuous periods of more than 12 hours in any 24-hour period~~. In situations where temporary hobbling is necessary, the *animal handlers* should ensure sufficient distance between the two hobbled legs ~~is required~~ to allow the equid to stand ~~as~~ naturally ~~as possible~~ and move without risk of injury.

When temporary tethering is necessary working equids should be able to lie down, and if tethered outdoors, turn around and walk. The tethering site should ~~have a minimum radius of nine metres, and should~~ be free from obstructions that may entangle the tether. Adequate water, ~~and~~ feed and ~~frequent~~ supervision should be provided; if necessary, action ~~may~~ should be taken ~~if necessary~~ by moving the animals to areas providing shade or shelter.

Mares in season should not be tethered ~~with~~ near stallions; mares about to foal or with a foal should not be tethered.

Equipment used to hobble ~~must~~ should be designed for ~~hobbling~~ that purpose. The parts of the hobbles which are in contact with the skin should not be made from material that causes pain or injury (Burn *et al.*, 2008).

~~Harness injury should be prevented through daily checking of harness for damage and prompt, effective repair as necessary. Equids should be checked after work for signs of rubbing and hair loss and the source of any problems should be removed through maintenance and padding where required. Bits in particular should have no sharp edges and should be of the appropriate size for the animal.~~

Owners and users of working equids should be discouraged from using whips and harmful goads such as sticks. Instead humane training practices for equids should be promoted which focus on developing good driving practices.

Outcome based measurables: behaviour, morbidity, mortality~~, and morbidity rates~~, body condition and physical appearance, lameness and fitness to work ~~(firing, harness and hobbling wounds and lameness), behavioural signs~~.

Article 7.X.10.

Behaviour ~~and social interactions~~

~~Natural behaviours and social interactions differ between horses, mules and donkeys,~~ and *Animal handlers* should be familiar ~~a familiarity~~ with normal and abnormal behaviour of each type of working equid ~~is recommended~~ in order to interpret the welfare implications of what is being observed.

Good ~~Human~~ human-animal interaction should be positive in order not to compromise the welfare of the working equid.

Different natural behaviours and social interactions between horses, mules and donkeys should be taken into account.

~~Some behaviours may indicate an *animal welfare* problem but may not be uniquely indicative of one type of problem; they may be exhibited for a variety of different welfare causes. Depression, apathy, dullness and lethargy in equids which are usually active and alert can be indicative of a welfare problem. Changes in eating or drinking habits patterns may indicate a welfare problem, especially a decreased feed intake. This might also be an indicator of dental problems; poor feed quality or even feed contamination.~~

~~A variety of other behaviours may also be observed in working equids.~~

~~Behaviours indicating discomfort or pain such as:~~

- ~~Head pressing, stable walking, weaving, teeth grinding, grunting, food dropping, and inability to eat normally. Such behaviours may indicate disease process, abdominal or cranial pain.~~
- ~~Depression, circling, foot pawing, flank watching, inability to stand up, trashing, rolling. Such behaviour may indicate abdominal or other discomfort.~~
- ~~Disturbance of ground or bedding. Such behaviours may indicate disease process, abdominal pain, malnutrition.~~
- ~~Weight shifting, foot pawing, reluctance to move or abnormal movement. Such behaviours may indicate leg, foot or abdominal pain.~~
- ~~Head shaking, discharges or avoidance of head contact. Such behaviours may indicate head, ear or ocular discomfort.~~
- ~~Itching, rubbing, self-inflicted abrasions. Such behaviours may indicate skin problems, parasites.~~
- ~~Non-specific pain in horses: restlessness, agitation and anxiety, rigid stance and reluctance to move, lowered head carriage, fixed stare and dilated nostrils, clenched jaw, aggression and reluctance to be handled. In donkeys these behaviours are more subtle and may not be recognised.~~
- ~~Abdominal pain in horses: vocalisation, rolling, kicking at abdomen, flank watching, stretching. In donkeys, dullness and depression.~~
- ~~Limb and foot pain in horses: weight-shifting, limb guarding, abnormal weight distribution, pointing, hanging and rotating limbs, abnormal movement, reluctance to move. These signs are more subtle in donkeys, although repeated episodes of lying down are reportedly more indicative.~~
- ~~Head and dental pain: headshaking, abnormal bit behaviour, altered eating; anorexia, quidding, food pocketing (Ashley *et al.*, 2005).~~

~~Behaviours indicating fear or anxiety such as:~~

- ~~Avoidance of humans, especially when handlers or objects associated with their handling come close,~~
- ~~A reluctance by the working equids to engage in their use for traction or transport or even a cessation and aggressive behaviour especially when fitting equipment or loading is undertaken.~~

Outcome-based measurables: behaviour~~s~~ ~~,~~ ~~of discomfort or pain, sociability with humans and other equids, alertness, injuries, changes in weight and~~ body condition and physical appearance, and fitness to work ~~willingness to accept equipment and loading for work~~.

Article 7.X.11.

End ~~of life issues: euthanasia, slaughter (including end~~ of working life~~, abandonment)~~

Consideration should be given to end of life issues.

Abandonment of equids should be discouraged. The *Competent Authorities* should ~~be responsible for~~ developing and implementing guidance or legislation to prevent abandonment while taking steps to make provision for abandoned animals ~~which would~~ to ensure their welfare.

When working equids need to be ~~*euthanasia* or~~ *slaughtered or killed* ~~is practised in working equids~~, ~~the general principles in the~~ recommendations in Chapters 7.5 and 7.6. ~~of the *Terrestrial Code*~~ should be followed to avoid~~. *Euthanasia is the humane method of ending an animal's life in the most pain free and least stressful way possible.*~~ ~~Otherwise~~ the ~~working~~ equids ~~may~~ suffering a prolonged and painful *death* by abandonment, neglect or disease or acute, painful death such as being eaten by *wild animals*, or hit by a road vehicle.

Article 7.X.12.

Appropriate workloads

~~No equid under the age of four years should be worked. They are under developed and their bones have not had time to mature sufficiently to cope with the rigours of work. In horses upper fore and hind limb growth plates do not close until four years of age and spinal ones not until five years of age.~~ Equids continue to develop until over the age of five years so consideration should be given, according to workload, as to when working life commences. In general this should be three years of age or more but never less than two years of age. Animals that are subjected to excessive work too young in life will usually suffer from leg and back injuries in later life, resulting in a much-reduced working life.

EU comment

The EU asks the OIE to consider rephrasing the final sentence so that it reads:

"Animals that are subjected to excessive work too young in life will usually suffer from leg and back injuries in later life, resulting in compromised welfare and a much-reduced working life."

Justification:

The chapter is about welfare and it should be highlighted that the equid's welfare is also negatively affected.

~~No~~ ~~M~~mares should not be ridden or worked ~~within~~ three months before and after ~~of~~ foaling.

Special considerations should be given to old animals.

Animals should work a maximum of six hours per day and should be given at least one, preferably two, full day's rest in every seven-day period ~~(preferably two)~~. Consideration should be given to the animal's physical condition and age and the work load should be adjusted accordingly.

EU comment

The EU asks the OIE to consider rephrasing the final sentence so that it reads:

"Consideration should be given to the animal's physical and mental condition and age and the work load should be adjusted accordingly."

Justification:

As mentioned above mental health is also relevant in this context.

Consideration should be given to the weather conditions (work should be reduced in very hot weather). Breaks should be given at least every two hours and ~~fresh~~ drinkable water should be provided ~~available~~.

EU comment

The EU asks the OIE to include "sufficient" in the final sentence so that it reads:

"Breaks should be given at least every two hours and sufficient drinkable water should be provided."

Justification:

It is not enough to provide water. It is also necessary to ensure that the amount provided is adequate in relation to the animal's physiological needs.

All animals should receive sufficient good quality feed corresponding to their individual requirements. ~~Fresh~~ drinkable water and roughage should be available to aid digestion.

EU comment

The EU asks the OIE to include "sufficient" in the final sentence so that it reads:

"Sufficient drinkable water and roughage should be available to aid digestion."

Justification:

It is not enough to provide water. It is also necessary to ensure that the amount provided is adequate in relation to the animal's physiological needs.

Sick or injured animals should not be worked. Any animal that has been under veterinary treatment should not be returned to work until advised by ~~from~~ the *veterinarian* ~~is received~~.

~~Animals should be in good health and fit to do the work that is required of them.~~

Outcome based measurables: behaviour, body condition and physical appearance, ~~dehydration,~~ handling response, ~~gait and~~ lameness and fitness to work.

Article 7.X.13.

Farriery and harnessing

1. Farriery

Owners and handlers should routinely clean and check the hooves of the working equid before and after work.

Hoof trimming and shoeing of working equids should only be performed by persons with the necessary knowledge and skills.

~~Equids are shod for two main reasons; to prevent hoof wear and to improve performance. Many equids cope well without shoes and, if they are coping well, are best unshod. However, poor hoof care and farriery predisposes the working equid to injury and infection, and can result in changes to the size, shape and function of the hoof. Untreated abnormalities of the foot can create long term problems in other parts of the leg due to change in gait and weight bearing. Such problems could include:~~

~~a)~~ ~~Conditions of the hoof wall and horn producing tissues: hoof wall defects, such as cracks that involve the sensitive tissue; laminitis, laminar tearing (local, due to hoof imbalance), separation or inflammation of the sensitive laminae from the insensitive laminae; abscess formation; contusions of the hoof causing bruising or corn formation; neoplasia, and pododermatitis (thrush or canker).~~

~~b)~~ ~~Conditions of the third phalanx: third phalanx problems include fractures of the coffin bone, deep digital flexor insertional tendinopathy, pedal osteitis (generalised or localised inflammation of the bone), and disruption of the insertions of the collateral ligaments, cyst-like lesion formation, and remodeling disease.~~

~~c)~~ ~~Conditions of the podotrochlear region: these include distal interphalangeal synovitis or capsulitis, deep digital flexor tendinitis, desmitis of the impar (distal navicular ligament) or collateral sesamoidean ligaments, navicular osteitis or osteopathy, and vascular disease of the navicular arteries, and navicular fractures.~~

~~These conditions are all characterised by pain that can be localised in the hoof (Turner, 2013).~~

Outcome based measurables: Behaviour, body condition and physical appearance, lameness and fitness to work.

2. Harnessing

~~For the purpose of this chapter, harnessing includes all parts of the driving harness, saddle, bridle and bit. They work to control the working equid, act as a braking system when pulling a cart, hold loads in place and transfer power to attached carts or agricultural implements.~~

A properly designed, well-fitted and comfortable harness allows the working equid to pull the equipment to the best of its ability, efficiently and without risk of pain or injuries. ~~A poorly designed or ill-fitted harness can cause injury and discomfort to the animal as well as inefficient transfer of power from the animal to the implement or cart and can also be a danger for the handler and other road users.~~

Harness injury should be prevented ~~through~~ by using properly fitted and adjusted harness which is checked daily for damage and repaired promptly as necessary. Equids should be checked after work for signs of rubbing and hair loss and the source of any problems should be removed through maintenance and padding where required.

~~There should be enough clean padding on harnesses so the animals do not have to work with open sores.~~

~~A good harness~~ Harness~~;~~: ~~does~~ should not have sharp edges which could cause injury ~~to the equids~~, ; should fit~~s~~ well so that it does not cause wounds or chafing caused by excess movement; ~~is~~ should be smoothly shaped or padded so that loads imposed on the working equids' ~~body~~ bodies are spread over a large area; and ~~does~~ should not impede the animal's movement or normal breathing or restrict blood supply. ~~Good harnessing also maximizes the efficiency of transfer of draught energy from animal to load so that minimum effort is required by the working equid.~~

Carts should be maintained to ensure accurate balancing and appropriate tyre pressure. For draught ~~animals~~ equids the use of swingletrees is recommended so as to balance the pull and thus as a result reduce the risk of sores from the harness.

Owners ~~are responsible for~~ should ~~ensuring~~ ensure that effective ~~welfare-friendly~~ harnessing and ~~is accompanied by~~ good riding and driving practices.

EU comment

The EU asks the OIE to revise the above sentence so that it reads:

"Owners should ensure that effective harnessing and good riding and driving practices are carried out."

Justification:

Linguistic; the sentence is incomplete.

Bits should be ~~ideally~~ of a simple type (such as a straight bar snaffle), depending on work, but should always be smooth, appropriately sized for the equid and kept clean. Inappropriate materials such as thin cord or wire should ~~not~~ never be used as bits or to repair bits.

~~Wounds caused by poorly maintained or inappropriate harnessing are common in working equids and attention should be paid to prevention of harness related injuries. (Pearson *et al.*, 2003).~~

Outcome based measurables: ~~lesions at sites of harness abrasion including abrasion of eye area associated with blinkers, lesions at lip commissures or other parts of the mouth associated with biting; lesions on tail, hindquarters, hind limbs or hocks associated with contact with cart.~~ Behaviour, body condition and physical appearance, lameness and fitness to work.

— Text deleted.

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Annex 19

CHAPTER 8.3.

INFECTION WITH BLUETONGUE VIRUS

EU position

The EU thanks the OIE and supports the adoption of this modified chapter.

Article 8.3.1.

General provisions

For the purposes of the *Terrestrial Code*, bluetongue is defined as an *infection* of ruminants and camelids with bluetongue virus (BTV) that is transmitted by *Culicoides vectors*.

The following defines ~~an~~ the occurrence of *infection* with BTV:

1) BTV has been isolated from a ruminant or camelid or a product derived from that ruminant or camelid, or

2) ~~viral~~ antigen or ~~viral~~ ribonucleic acid specific to BTV has been identified in samples from a ruminant or camelid showing clinical signs consistent with bluetongue, or epidemiologically linked to a suspected or confirmed *case*, or

3) antibodies to structural or nonstructural proteins of BTV that are not a consequence of *vaccination* have been identified in a ruminant or camelid that either shows clinical signs consistent with bluetongue, or is epidemiologically linked to a suspected or confirmed *case*.

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

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

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

Article 8.3.2.

Safe commodities

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

1) *milk* and *milk products*;

2) *meat* and *meat products*;

3) hides and skins;

4) wool and fibre;

5) *in vivo* derived bovine embryos collected, processed and stored in accordance with Chapter 4.7.

Annex 19 (contd)

Article 8.3.3.

~~BTV free country~~ Country or zone free from bluetongue

1) Historical freedom as described in Chapter 1.4. does not apply to bluetongue ~~*infection* with BTV~~.

2) A country or a *zone* may be considered free from bluetongue when *infection* with BTV is notifiable in the ~~whole~~ entire country and either:

   a) a *surveillance* programme in accordance with Articles 8.3.14. to 8.3.17. has demonstrated no evidence of *infection* with BTV in the country or *zone* during the past two years; or

   b) an ongoing *surveillance* programme has found no *Culicoides* for at least two years in the country or *zone*.

3) A ~~BTV free~~ country or *zone* free from bluetongue in which ongoing *vector surveillance*, performed in accordance with point 5 of Article 8.3.16., has found no *Culicoides* will not lose its free status through the introduction of vaccinated, seropositive or infective ruminants or camelids, or their semen~~,~~ or embryos ~~or oocytes~~ from infected countries or infected *zones*.

4) A ~~BTV free~~ country or *zone* free from bluetongue in which *surveillance* has found evidence that *Culicoides* are present will not lose its free status through the introduction of seropositive or vaccinated ruminants or camelids, or semen~~,~~ or embryos ~~or oocytes~~ from infected countries or infected *zones*, provided:

   a) an ongoing *surveillance* programme focused on ~~BTV~~ transmission of BTV and a consideration of the epidemiology of *infection* with BTV, in accordance with Articles 8.3.14. to 8.3.17. and Chapter 4.3., has demonstrated no evidence of ~~BTV~~ transmission of BTV in the country or *zone*; or

   b) the ruminants or camelids, their semen~~,~~ and embryos ~~and oocytes~~ were introduced in accordance with this chapter.

5) A ~~BTV free~~ country or *zone* free from bluetongue adjacent to an infected country or infected *zone* should include a *zone* in which *surveillance* is conducted in accordance with Articles 8.3.14. to 8.3.17.

Article 8.3.4.

~~BTV seasonally free zone~~ Zone seasonally free from bluetongue

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

For the application of Articles 8.3.7., 8.3.9. and 8.3.11., the seasonally free period is taken to commence the day following the last evidence of ~~BTV~~ transmission of BTV (as demonstrated by the *surveillance* programme), and of the cessation of activity of adult *Culicoides*.

For the application of Articles 8.3.7., 8.3.9. and 8.3.11., the seasonally free period is taken to conclude either:

1) at least 28 days before the earliest date that historical data show ~~BTV~~ transmission of BTV may recommence; or

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

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

Article 8.3.5.

~~BTV infected country~~ Country or zone infected with BTV

For the purposes of this chapter, a ~~BTV infected~~ country or ~~infected~~ *zone* infected with BTV is one that does not fulfill the requirements to qualify as either ~~BTV~~ free ~~country or *zone*~~ or ~~BTV~~ seasonally free ~~*zone*~~ from bluetongue.

Article 8.3.6.

Recommendations for importation from ~~BTV free~~ countries or zones free from bluetongue

For ruminants and camelids

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

1) the animals showed no clinical sign of ~~BT~~ bluetongue on the day of shipment;

2) the animals were kept in a ~~BTV free~~ country or *zone* free from bluetongue since birth or for at least 60 days prior to shipment; or

3) the animals were kept in a ~~BTV free~~ country or *zone* free from bluetongue for at least 28 days, then were subjected, with negative results, to a serological test to detect antibodies to the BTV group and remained in the ~~BTV~~ free country or *zone* until shipment; or

4) the animals were kept in a ~~BTV~~ free country or *zone* free from bluetongue for at least 14 days, then were subjected, with negative results, to an agent identification test, and remained in the ~~BTV~~ free country or *zone* until shipment; or

5) the animals:

   a) were kept in a ~~BTV free~~ country or *zone* free from bluetongue for at least seven days;

   b) were vaccinated, at least 60 days before the introduction into the free country or *zone*, against all serotypes demonstrated to be present in the source population through a *surveillance* programme as described in Articles 8.3.14. to 8.3.17.;

   c) were identified as having been vaccinated;

   d) remained in the ~~BTV~~ free country or *zone* until shipment;

AND

6) if the animals were exported from a free *zone* within an infected country, either:

   a) did not transit through an infected *zone* during transportation to the *place of shipment*; or

   b) were protected from attacks from *Culicoides* at all times when transiting through an infected *zone*; or

   c) had been vaccinated in accordance with point 5 above.

Annex 19 (contd)

Article 8.3.7.

Recommendations for importation from ~~BTV~~ zones seasonally free ~~zones~~ from bluetongue

For ruminants and camelids

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

1) showed no clinical sign of ~~BT~~ bluetongue on the day of shipment;

2) were kept during the seasonally free period in a ~~BTV~~ seasonally free *zone* since birth or for at least 60 days prior to shipment; or

3) were kept during the ~~BTV~~ seasonally free period in a ~~BTV~~ seasonally free *zone* for at least 28 days prior to shipment, and were subjected during the residence period in the *zone* to a serological test to detect antibodies to the BTV group, with negative results, carried out at least 28 days after the commencement of the residence period; or

4) were kept during the ~~BTV~~ seasonally free period in a ~~BTV~~ seasonally free *zone* for at least 14 days prior to shipment, and were subjected during the residence period in the *zone* to an agent identification test, with negative results, carried out at least 14 days after the commencement of the residence period; or

5) were kept during the seasonally free period in a ~~BTV~~ seasonally free *zone* and were vaccinated, at least 60 days before the introduction into the free country or *zone*, against all serotypes demonstrated to be present in the source population through a *surveillance* programme in accordance with Articles 8.3.14. to 8.3.17. and were identified as having been vaccinated and remained in the ~~BTV~~ seasonally free country or *zone* until shipment;

AND

6) either:

   a) did not transit through an infected *zone* during transportation to the *place of shipment*; or

   b) were protected from attacks from *Culicoides* at all times when transiting through an infected *zone*; or

   c) were vaccinated in accordance with point 5 above.

Article 8.3.8.

Recommendations for importation from ~~BTV infected~~ countries or zones infected with BTV

For ruminants and camelids

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

1) showed no clinical sign of ~~BT~~ bluetongue on the day of shipment;

2) were protected from attacks from *Culicoides* in a *vector*-protected *establishment* for at least 60 days prior to shipment and during transportation to the *place of shipment*; or

3) were protected from attacks from *Culicoides* in a *vector*-protected *establishment* for at least 28 days prior to shipment and during transportation to the *place of shipment*, and were subjected during that period to a serological test to detect antibodies to the BTV group, with negative results, carried out at least 28 days after introduction into the *vector*-protected *establishment*; or

4) were protected from attacks from *Culicoides* in a *vector*-protected *establishment* for at least 14 days prior to shipment and during transportation to the *place of shipment*, and were subjected during that period to an agent identification test, with negative results, carried out at least 14 days after introduction into the *vector*-protected *establishment*; or

5) were vaccinated, at least 60 days before shipment, against all serotypes demonstrated to be present in the source population through a *surveillance* programme in accordance with Articles 8.3.14. to 8.3.17.; or

6) were demonstrated to have antibodies for at least 60 days prior to dispatch against all serotypes demonstrated to be present in the source population through a *surveillance* programme in accordance with Articles 8.3.14. to 8.3.17.

Article 8.3.9.

Recommendations for importation from ~~BTV free~~ countries or zones free or ~~from BTV zones~~ seasonally free ~~zones~~ from bluetongue

For semen of ruminants and camelids

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

1) the donor males:

   a) showed no clinical sign of bluetongue on the day of collection;

   b) were kept in a ~~BTV free~~ country or *zone* free from bluetongue or in a seasonally free *zone* during the ~~BTV~~ seasonally free period ~~in a BTV seasonally free *zone*~~ for at least 60 days before commencement of, and during, collection of the semen; or

   c) were subjected to a serological test to detect antibodies to the BTV group, with negative results, between 28 and 60 days after the last collection for this consignment, and, in case of a ~~BTV~~ seasonally free *zone*, at least every 60 days throughout the collection period; or

   d) were subjected to an agent identification test on blood samples collected at commencement and conclusion of, and at least every 7 days (virus isolation test) or at least every 28 days (PCR test) during, semen collection for this consignment, with negative results;

2) the semen was collected, processed and stored in accordance with Chapters 4.5. and 4.6.

Article 8.3.10.

Recommendations for importation from ~~BTV infected~~ countries or zones infected with BTV

For semen of ruminants and camelids

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

1) the donor males:

   a) showed no clinical sign of bluetongue on the day of collection;

   b) were kept in a *vector*-protected *establishment* for at least 60 days before commencement of, and during, collection of the semen; or

c) were subjected to a serological test to detect antibodies to the BTV group, with negative results, at least every 60 days throughout the collection period and between 28 and 60 days after the final collection for this consignment; or

d) were subjected to an agent identification test on blood samples collected at commencement and conclusion of, and at least every 7 days (virus isolation test) or at least every 28 days (PCR test) during, semen collection for this consignment, with negative results;

2) the semen was collected, processed and stored in accordance with Chapters 4.5. and 4.6.

Article 8.3.11.

Recommendations for importation from ~~BTV free~~ countries or zones free or zones ~~from BTV~~ seasonally free ~~zones~~ from bluetongue

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

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

1) the donor females:

a) showed no clinical sign of bluetongue on the day of collection;

b) were kept in a ~~BTV free~~ country or *zone* free from bluetongue or in a seasonally free zone during the seasonally free period ~~in a seasonally free *zone*~~ for at least the 60 days prior to, and at the time of, collection of the embryos; or

c) were subjected to a serological test to detect antibodies to the BTV group, between 28 and 60 days after collection, with negative results; or

d) were subjected to an agent identification test on a blood sample taken on the day of collection, with negative results;

2) the embryos were collected, processed and stored in accordance with Chapters 4.7., 4.8. and 4.9., as relevant.

Article 8.3.12.

Recommendations for importation from ~~BTV infected~~ countries or zones infected with BTV

For *in vivo* derived embryos ~~or oocytes~~ of ruminants (other than bovine embryos) and other BTV susceptible animals and for *in vitro* produced bovine embryos

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

1) the donor females:

a) showed no clinical sign of bluetongue on the day of collection;

b) were kept in a *vector*-protected *establishment* for at least 60 days before commencement of, and during, collection of the embryos ~~or oocytes~~; or

c) were subjected to a serological test to detect antibodies to the BTV group, between 28 and 60 days after collection, with negative results; or

d) were subjected to an agent identification test on a blood sample taken on the day of collection, with negative results;

2) the embryos ~~or oocytes~~ were collected, processed and stored in accordance with Chapters 4.7., 4.8. and 4.9., as relevant;

3) the semen used to fertilise the oocytes complied with Article 8.3.9.

Article 8.3.13.

Protecting animals from *Culicoides* attacks

1. Vector-protected establishment or facility

The *establishment* or facility should be approved by the *Veterinary Authority* and the means of protection should at least comprise the following:

a) appropriate physical barriers at entry and exit points, ~~e.g.~~ such as double-door entry-exit system;

b) openings of the building are *vector* screened with mesh of appropriate gauge impregnated regularly with an approved insecticide in accordance with manufacturers' instructions;

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

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

e) standard operating procedures, including description of back-up and alarm systems, for operation of the *establishment* or facility and transport of animals to the place of *loading*.

2. During transportation

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

a) Transport by road

Risk management strategies may include:

i) treating animals with insect repellents prior to and during transportation;

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

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

iv) darkening the interior of the *vehicle*, for example by covering the roof or sides of *vehicles* with shade cloth;

v) *surveillance* for *vectors* at common stopping and *unloading* points to gain information on seasonal variations;

vi) using historical information or information from appropriately verified and validated bluetongue epidemiological models to identify low risk ports and transport routes.

Annex 19 (contd)

b) Transport by air

Prior to *loading* the animals, the crates, containers or jet stalls should be sprayed with an insecticide approved in the country of dispatch.

Crates, containers or jet stalls in which animals are being transported and the cargo hold of the aircraft should be sprayed with an approved insecticide when the doors have been closed and prior to take-off. All possible insect harbourage should be treated. The spray containers should be retained for inspection on arrival.

In addition, during any stopover in countries or *zones* not free from bluetongue, prior to the opening of any aircraft door and until all doors are closed, netting of appropriate gauge impregnated with an approved insecticide should be placed over crates, containers or jet stalls.

Article 8.3.14.

Introduction to surveillance

Articles 8.3.14. to 8.3.17. define the principles and provide guidance on *surveillance* for *infection* with BTV, complementary to Chapter 1.4. and for *vectors* complementary to Chapter 1.5.

Bluetongue is a *vector*-borne *infection* transmitted by ~~different~~ various species of *Culicoides* in a range of ecosystems.

The purpose of *surveillance* is the detection of ~~BTV~~ transmission of BTV in a country or *zone* and not determination of the status of an individual animal or *herds*. *Surveillance* deals with the evidence of *infection* with BTV in the presence or absence of clinical signs.

An important component of the epidemiology of bluetongue is the capacity of its *vector*, which provides a measure of *disease risk* that incorporates *vector* competence, abundance, biting rates, survival rates and extrinsic *incubation period*. However, methods and tools for measuring some of these *vector* factors remain to be developed, particularly in a field context. Therefore, *surveillance* for bluetongue should focus on transmission of BTV in domestic ruminants and camelids.

The impact and epidemiology of bluetongue widely differ in different regions of the world and therefore it is not appropriate to provide specific recommendations for all situations. Member Countries should provide scientific data that explain the epidemiology of bluetongue in the country or *zone* concerned and adapt the *surveillance* strategies for defining their status to the local conditions. There is considerable latitude available to Member Countries to justify their status at an acceptable level of confidence.

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

Article 8.3.15.

General conditions and methods for surveillance

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

a) a formal and ongoing system for detecting and investigating *outbreaks* of *disease* should be in place;

b) a procedure should be in place for the rapid collection and transport of samples from suspected *cases* of *infection* with BTV to a *laboratory* for diagnosis;

c) a system for recording, managing and analysing diagnostic and *surveillance* data should be in place.

2) The bluetongue *surveillance* programme should:

a) in a free country or *zone* or seasonally free ~~country or~~ *zone*, have an early warning system which obliges farmers and workers, who have regular contact with domestic ruminants, as well as diagnosticians, to report promptly any suspicion of bluetongue ~~*infection* with BTV~~ to the *Veterinary Authority*.

An effective *surveillance* system will periodically identify ~~suspicious~~ suspected *cases* that require follow-up and investigation to confirm or exclude whether the cause of the condition is bluetongue ~~BTV~~. The rate at which such suspected *cases* are likely to occur will differ between epidemiological situations and cannot therefore be predicted reliably. All suspected *cases* of bluetongue should be investigated immediately and samples should be taken and submitted to a *laboratory*. This requires that sampling kits and other equipment be available for those responsible for *surveillance*;

AND

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

Article 8.3.16.

Surveillance strategies

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

It may be appropriate to focus *surveillance* in an area adjacent to a border of an infected country or infected *zone* for up to 100 kilometres, taking into account relevant ecological or geographical features likely to interrupt the transmission of BTV or the presence in the bordering infected country or infected *zone* of a bluetongue *surveillance* programme (in accordance with Articles 8.3.14. to 8.3.17.) that supports a lesser distance.

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

Similarly, virological and serological testing may be targeted to species that rarely show clinical signs (e.g. cattle).

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

If a Member Country wishes to declare freedom from bluetongue ~~*infection* with BTV~~ in a specific *zone*, the design of the *surveillance* strategy should be aimed at the population within the *zone*.

For random surveys, the design of the sampling strategy should incorporate epidemiologically appropriate design prevalence. The sample size selected for testing should be large enough to detect evidence of *infection* if it were to occur at a predetermined minimum rate. The sample size and expected prevalence determine the level of confidence in the results of the survey. The Member Country should justify the choice of design prevalence and confidence level based on the objectives of *surveillance* and the epidemiological situation, in accordance with Chapter 1.4. Selection of the design prevalence in particular should be based on the prevailing or historical epidemiological situation.

Annex 19 (contd)

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* and *infection* history and the different species in the target population.

Irrespective of the testing system employed, *surveillance* system design should anticipate the occurrence of false positive reactions. If the characteristics of the testing system are known, the rate at which these false positives are likely to occur can be calculated in advance. There should be an effective procedure for following up positive reactions to ultimately determine with a high level of confidence, whether they are indicative of *infection* or not. This should involve both supplementary tests and follow-up investigation to collect diagnostic material from the original sampling unit as well as those which may be epidemiologically linked to it.

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

1. Clinical surveillance

   Clinical *surveillance* aims to detect clinical signs of bluetongue at the *flock* or *herd* level, particularly during a newly introduced *infection*. In sheep and occasionally goats, clinical signs may include oedema, hyperaemia of mucosal membranes, coronitis and cyanotic tongue.

   Suspected *cases* of bluetongue detected by clinical *surveillance* should always be confirmed by *laboratory* testing.

2. Serological surveillance

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

   Samples should be examined for antibodies against BTV. Positive test results can have four possible causes:

   a) natural *infection*,

   b) *vaccination*,

   c) maternal antibodies,

   d) the lack of specificity of the test.

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

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

Serological *surveillance* in a free *zone* should target those areas that are at highest risk of ~~BTV~~ transmission of BTV, 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 bluetongue ~~*infection* with BTV~~, either random or targeted sampling is suitable to select *herds* or animals for testing.

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

3. Virological surveillance

Isolation and genetic analysis of BTV from a proportion of infected animals provides information on serotype and genetic characteristics of the viruses concerned.

Virological *surveillance* can be conducted:

a) to identify virus transmission in at risk populations,

b) to confirm clinically suspected *cases*,

c) to follow up positive serological results,

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

4. Sentinel animals

Sentinel animals are a form of targeted *surveillance* with a prospective study design. They are the preferred strategy for bluetongue *surveillance*. They comprise groups of unexposed animals that have not been vaccinated and are managed at fixed locations and sampled regularly to detect new *infections* with BTV.

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

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

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

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

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

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

5. Vector surveillance

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

Vector surveillance aims to demonstrate the absence of *vectors* or to determine areas of different levels of risk and local details of seasonality by determining the various *vector* species present in an area, their respective seasonal occurrence, and abundance. *Vector surveillance* has particular relevance to potential areas of spread.

Long term *surveillance* can also be used to assess *vector* abatement measures or to confirm continued absence of *vectors*.

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

Vector surveillance should be based on scientific sampling techniques. The choice of the number and type of traps to be used 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.

Animal-based *surveillance* strategies are preferred to detect virus transmission.

Article 8.3.17.

Documentation of ~~BTV infection~~ bluetongue free status

1. Additional surveillance requirements for Member Countries declaring freedom from bluetongue ~~infection with BTV~~

In addition to the general requirements described above, a Member Country declaring freedom from bluetongue ~~*infection* with BTV~~ 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 in accordance with general conditions and methods described in this chapter, to demonstrate absence of *infection* with BTV during the preceding 24 months in susceptible domestic ruminant populations. This requires the support of a *laboratory* able to undertake identification of *infection* with BTV through virus detection and antibody tests. This *surveillance* should be targeted to unvaccinated animals. Clinical *surveillance* may be effective in sheep while serological *surveillance* is more appropriate in cattle.

Annex 19 (contd)

2. Additional requirements for countries or zones that practise vaccination

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

In countries or *zones* that practise *vaccination*, virological and serological tests should be carried out to ensure the absence of virus transmission. These tests should be performed on unvaccinated subpopulations or on sentinels. The tests should be repeated at appropriate intervals in accordance with the purpose of the *surveillance* programme. For example, longer intervals may be adequate to confirm endemicity, while shorter intervals may allow on-going demonstration of absence of transmission.

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— Text deleted.

Annex 20

CHAPTER 8.7.

INFECTION WITH EPIZOOTIC HEMORRHAGIC DISEASE VIRUS

EU position

The EU thanks the OIE and supports the adoption of this modified chapter.

Article 8.7.1.

General provisions

For the purposes of the *Terrestrial Code*, epizootic hemorrhagic disease (EHD) is defined as an *infection* of cervids and bovids with epizootic hemorrhagic disease virus (EHDV) that is transmitted by *Culicoides vectors*.

The following defines the occurrence of ~~an~~ *infection* with EHDV:

1) EHDV has been isolated from a sample from a cervid or bovid; or

2) ~~viral~~ antigen or ~~viral~~ ribonucleic acid specific to EHDV has been identified in samples from a cervid or bovid showing clinical signs consistent with EHD, or epidemiologically linked to a suspected or confirmed *case*; or

3) antibodies to structural or nonstructural proteins of EHDV that are not a consequence of *vaccination* have been identified in a cervid or bovid that either shows clinical signs consistent with EHD, or is epidemiologically linked to a suspected or confirmed *case*.

For the purposes of the *Terrestrial Code*, the *infective period* for EHD~~V~~ shall be 60 days.

In the absence of clinical *disease* in a country or *zone*, its EHD status should be determined by an ongoing *surveillance* programme in accordance with Article 8.7.14.

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

Article 8.7.2.

Safe commodities

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

1) *milk* and *milk products*;

2) *meat* and *meat products*;

3) hides, skins, antlers and hooves;

4) wool and fibre.

Article 8.7.3.

Country or zone free from EHD

1) Historical freedom as described in Chapter 1.4. does not apply to EHD.

2) A country or a *zone* may be considered free from EHD when *infection* with EHDV is notifiable in the ~~whole~~ entire country, importation of animals and their semen~~,~~ or embryos ~~or oocytes~~ is carried out in accordance with this chapter and either:

   a) a *surveillance* programme in accordance with Article 8.7.14. has demonstrated no evidence of ~~EHDV~~ transmission of EHDV in the country or *zone* during the past two years; or

   b) an ongoing *surveillance* programme in accordance with Article 8.7.14. and Chapter 4.3. has found no *Culicoides* for at least two years in the country or *zone*.

3) A country or *zone* free from EHD in which ongoing *vector surveillance* has found no evidence of *Culicoides* will not lose its free status through the introduction of seropositive or infective animals, or semen~~,~~ or embryos ~~or oocytes~~ from countries or *zones* infected with EHDV.

4) A country or *zone* free from EHD in which *Culicoides* are present will not lose its free status through the introduction of seropositive animals, or semen~~,~~ or embryos ~~or oocytes~~ provided that:

   a) an ongoing *surveillance* programme has focused on ~~EHDV~~ transmission of EHDV in domestic bovids and farmed cervids and has demonstrated no evidence of ~~EHDV~~ transmission in the country or *zone*; or

   b) the animals, semen~~,~~ and embryos ~~and oocytes~~ were introduced in accordance with this chapter.

Article 8.7.4.

Zone seasonally free from EHD

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

For the application of Articles 8.7.7., 8.7.9. and 8.7.11., the seasonally free period is taken to commence the day following the last evidence of ~~EHDV~~ transmission of EHDV (as demonstrated by the *surveillance* programme), and of the cessation of activity of adult *Culicoides*.

For the application of Articles 8.7.7., 8.7.9. and 8.7.11., the seasonally free period is taken to conclude either:

1) at least 28 days before the earliest date that historical data show *vector* activity may recommence; or

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

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

Article 8.7.5.

Country or zone infected with EHDV

For the purposes of this chapter, a country or *zone* infected with EHDV is one that does not fulfil the requirements to qualify as either a country or *zone* free from EHD or a *zone* seasonally free from EHD.

Annex 20 (contd)

Article 8.7.6.

Recommendations for importation from countries or zones free from EHD

For bovids and cervids

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

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

2) the animals were kept in a country or *zone* free from EHD since birth or for at least 60 days prior to shipment; or

3) the animals were kept in a country or *zone* free from EHD for at least 28 days, then were subjected, with negative results, to a serological test to detect antibody to the EHDV group and remained in the free country or *zone* ~~free from EHD~~ until shipment; or

4) the animals were kept in a country or *zone* free from EHD for at least 14 days, then were subjected, with negative results, to an agent identification test and remained in the free country or *zone* ~~free from EHD~~ until shipment; or

5) the animals:

   a) were kept in a country or *zone* free from EHD for at least seven days;

   b) were vaccinated at least 60 days before the introduction into the free country or *zone* ~~free from EHD~~ against all serotypes demonstrated to be present in the source population through a *surveillance* programme as described in Article 8.7.14.;

   c) were identified as having been vaccinated;

   d) remained in the free country or *zone* ~~free from EHD~~ until shipment;

AND

6) if the animals were exported from a free *zone* within an infected country either:

   a) did not transit through an infected *zone* during transportation to the *place of shipment*; or

   b) were protected from attacks from *Culicoides* at all times when transiting through an infected *zone*.

Article 8.7.7.

Recommendations for importation from zones seasonally free from EHD

For bovids and cervids

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

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

2) were kept ~~during the seasonally free period~~ in a *zone* seasonally free from EHD during the seasonally free period since birth or for at least 60 days prior to shipment; or

Annex 20 (contd)

3) were kept ~~during the seasonally free period~~ in a *zone* seasonally free from EHD during the seasonally free period for at least 28 days prior to shipment, and were subjected during the residence period in the *zone* to a serological test to detect antibodies to the EHDV group with negative results, carried out at least 28 days after the commencement of the residence period; or

4) were kept ~~during the seasonally free period~~ in a *zone* seasonally free from EHD during the seasonally free period for at least 14 days prior to shipment, and were subjected during the residence period in the *zone* to an agent identification test with negative results, carried out at least 14 days after the commencement of the residence period; or

5) were kept ~~during the seasonally free period~~ in a *zone* seasonally free from EHD during the seasonally free period and were vaccinated, at least 60 days before the introduction into the free country or *zone*, against all serotypes the presence of which in the source population has been demonstrated through a *surveillance* programme in accordance with Article 8.7.14. and were identified as having been vaccinated and remained in the free country or *zone* ~~free from EHD~~ until shipment;

AND

6) either:

   a) did not transit through an infected *zone* during transportation to the *place of shipment*; or

   b) were protected from attacks from *Culicoides* at all times when transiting through an infected *zone*; or

   c) were vaccinated in accordance with point 5 above.

Article 8.7.8.

Recommendations for importation from countries or zones infected with EHDV

For bovids and cervids

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

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

2) were protected from attacks from *Culicoides* in a *vector*-protected *establishment* for at least 60 days prior to shipment and during transportation to the *place of shipment*; or

3) were protected from attacks from *Culicoides* in a *vector*-protected *establishment* for at least 28 days prior to shipment and during transportation to the *place of shipment*, and were subjected during that period to a serological test to detect antibodies to the EHDV group, with negative results, carried out at least 28 days after introduction into the *vector*-protected *establishment*; or

4) were protected from attacks from *Culicoides* in a *vector*-protected *establishment* for at least 14 days prior to shipment and during transportation to the *place of shipment*, and were subjected during that period to an agent identification test with negative results, carried out at least 14 days after introduction into the *vector*-protected *establishment*; or

5) were demonstrated to have antibodies for at least 60 days prior to dispatch against all serotypes whose presence has been demonstrated in the source population through a *surveillance* programme in accordance with Article 8.7.14.

Article 8.7.9.

Recommendations for importation from countries or zones free or zones seasonally free from EHD

For semen of bovids and cervids

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

1) the donor males:

   a) showed no clinical sign of EHD on the day of collection;

   b) were kept in a country or *zone* free from EHD or in a seasonally free *zone* during the seasonally free period for at least 60 days before commencement of, and during, collection of the semen; or

   c) were subjected to a serological test to detect antibodies to the EHDV group, between 28 and 60 days after the last collection for this consignment, with negative results; or

   d) were subjected to an agent identification test on blood samples collected at commencement and conclusion of, and at least every seven days (virus isolation test) or at least every 28 days (PCR test) during, semen collection for this consignment, with negative results;

2) the semen was collected, processed and stored in accordance with Chapters 4.5. and 4.6.

Article 8.7.10.

Recommendations for importation from countries or zones infected with EHDV

For semen of bovids and cervids

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

1) the donor males:

   a) showed no clinical sign of EHD on the day of collection;

   b) were kept in a *vector*-protected *establishment* for at least 60 days before commencement of, and during, collection of the semen; or

   c) were subjected to a serological test to detect antibodies to the EHDV group, with negative results, at least every 60 days throughout the collection period and between 28 and 60 days after the final collection for this consignment; or

   d) were subjected to an agent identification test on blood samples collected at commencement and conclusion of, and at least every seven days (virus isolation test) or at least every 28 days (PCR test) during, semen collection for this consignment, with negative results;

2) the semen was collected, processed and stored in accordance with Chapters 4.5. and 4.6.

Article 8.7.11.

Recommendations for importation from countries or zones free or zones seasonally free from EHD

For embryos ~~or oocytes~~ of bovids and cervids

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

1) the donor females:

   a) showed no clinical sign of EHD on the day of collection;

   b) were kept in a country or *zone* free from EHD or in a seasonally free *zone* during the seasonally free period for at least the 60 days prior to, and at the time of, collection of the embryos ~~or oocytes~~; or

   c) were subjected to a serological test to detect antibodies to the EHDV group, between 28 and 60 days after collection, with negative results; or

   d) were subjected to an agent identification test on a blood sample taken on the day of collection, with negative results;

2) the embryos ~~or oocytes~~ were collected, processed and stored in accordance with Chapters 4.7., 4.8. and 4.9., as relevant.

Article 8.7.12.

Recommendations for importation from countries or zones infected with EHDV

For embryos ~~or oocytes~~ of bovids and cervids

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

1) the donor females:

   a) showed no clinical sign of EHD on the day of collection;

   b) were kept in a *vector*-protected *establishment* for at least 60 days before commencement of, and during, collection of the embryos ~~or oocytes~~; or

   c) were subjected to a serological test to detect antibodies to the EHDV group, between 28 and 60 days after collection, with negative results; or

   d) were subjected to an agent identification test on a blood sample taken on the day of collection, with negative results;

2) the embryos ~~or oocytes~~ were collected, processed and stored in accordance with Chapters 4.7., 4.8. and 4.9., as relevant.

Article 8.7.13.

Protecting animals from *Culicoides* attacks

1. Vector-protected establishment or facility

   The *establishment* or facility should be approved by the *Veterinary Authority* and the means of protection should at least comprise the following:

   a) appropriate physical barriers at entry and exit points, such as ~~for example,~~ double-door entry-exit system;

b) openings of the building are *vector* screened with mesh of appropriate gauge impregnated regularly with an approved insecticide in accordance with the ~~instructions of the~~ manufacturers' instructions;

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

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

e) standard operating procedures, including description of back-up and alarm systems, for operation of the *establishment* or facility and transport of animals to the place of *loading*.

2. During transportation

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

a) Transport by road

Risk management strategies may include:

i) treating animals with insect repellents prior to and during transportation;

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

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

iv) darkening the interior of the *vehicle*, for example by covering the roof or sides of *vehicles* with shade cloth;

v) *surveillance* for *vectors* at common stopping and *unloading* points to gain information on seasonal variations;

vi) using historical information or information from appropriately verified and validated EHD epidemiological models to identify low risk ports and transport routes.

b) Transport by air

Prior to *loading* the animals, the crates, containers or jet stalls should be sprayed with an insecticide approved in the country of dispatch.

Crates, containers or jet stalls in which animals are being transported and the cargo hold of the aircraft should be sprayed with an approved insecticide when the doors have been closed and prior to take-off. All possible insect harbourage should be treated. The spray containers should be retained for inspection on arrival.

In addition, during any stopover in countries or *zones* not free from EHD, prior to the opening of any aircraft door and until all doors are closed, netting of appropriate gauge impregnated with an approved insecticide should be placed over crates, containers or jet stalls.

Annex 20 (contd)

Article 8.7.14.

Surveillance

This article is complementary to Chapter 1.4. and, for *vectors*, complementary to Chapter 1.5. and outlines the principles for *surveillance* for EHD applicable to Member Countries seeking to determine the EHD status of a country or a *zone*.

EHD is a *vector*-borne *infection* transmitted by different species of *Culicoides* in a range of ecosystems.

An important component of the epidemiology of EHD is the capacity of its *vector*, which provides a measure of *disease risk* that incorporates *vector* competence, abundance, seasonal incidence, biting rates, survival rates and extrinsic *incubation period*. However, methods and tools for measuring some of these *vector* factors remain to be developed, particularly in a field context. Therefore, *surveillance* for EHD should focus on transmission of EHDV in domestic bovids and farmed cervids.

The purpose of *surveillance* is the detection of transmission of EHDV in a country or *zone* and not determination of the status of an individual animal or *herd*.

The impact and epidemiology of EHD differ widely in different regions of the world and it is not appropriate to provide specific recommendations for all situations. Member Countries should provide scientific data that explain the epidemiology of EHD in the country or *zone* concerned and adapt the *surveillance* strategies for defining their status to the local conditions. There is considerable latitude available to Member Countries to justify their status at an acceptable level of confidence.

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

General provisions on *surveillance* for arthropod *vectors* are in Chapter 1.5.

More specific approaches to *surveillance* for *Culicoides* transmitted *Orbivirus infections* are described in Chapters 8.3. and 12.1. Passive *surveillance* for clinical *cases* of EHD in *wild* cervids can be a useful tool for detecting disease, based on lesions of haemorrhagic *disease* combined with appropriate diagnostic tests.

— Text deleted.

Annex 21

CHAPTER 8.14.

INFECTION WITH RIFT VALLEY FEVER VIRUS

EU position

The EU supports the adoption of this modified chapter.

Article 8.14.1.

General provisions

1) The aim of this chapter is to mitigate the animal and public health risks posed by Rift Valley fever (RVF) and to prevent its international spread.

2) Humans and many animal species are susceptible to *infection*. For the purpose of the *Terrestrial Code*, RVF is defined as an *infection* of ruminants with Rift Valley fever virus (RVFV).

3) The following defines the occurrence of ~~RVFV~~ *infection* with RVFV:

   a) RVFV, excluding vaccine strains, has been isolated and identified as such from a sample from a ruminant; or

   b) antigen or ribonucleic acid specific to RVFV, excluding vaccine strains, has been identified in a sample from a ruminant epidemiologically linked to a confirmed or suspected *case* of RVF, or giving cause for suspicion of association or contact with RVFV; or

   c) antibodies to RVFV antigens which are not the consequence of *vaccination*, have been identified in a sample from a ruminant with either epidemiological links to a confirmed or suspected *case* of RVF, or giving cause for suspicion of association or contact with RVFV.

4) For the purposes of the *Terrestrial Code*, the *infective period* for RVF shall be 14 days.

5) In areas where RVFV is present, epizootics of RVF may occur following favourable climatic, environmental conditions and availability of susceptible host and competent *vector* populations. Epizootics are separated by inter-epizootic periods.

6) For the purposes of this chapter:

   a) 'area' means a part of a country that experiences epizootics and inter-epizootic periods, but which does not correspond to the definition of *zone*;

   b) 'epizootic of RVF' means the occurrence of *outbreaks* at an incidence substantially exceeding that during an inter-epizootic period;

   c) 'inter-epizootic period' means the period of variable duration, often long, with intermittent low level of *vector* activity and low rate of virus transmission, which is often not detected;

   d) ruminants include dromedary camels.

7) The historical distribution of RVF has been parts of the African continent, Madagascar, some other Indian Ocean Islands and the south western Arabian Peninsula. However, *vectors*, environmental and climatic factors, land-use dynamics, and animal movements may modify the temporal and spatial distribution of the *infection*.

8) When authorising import or transit of the *commodities* covered in the chapter, with the exception of those listed in Article 8.14.2., *Veterinary Authorities* should require the conditions prescribed in this chapter relevant to the RVF status of the ruminant population of the *exporting country*.

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

Article 8.14.2.

Safe commodities

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

1) hides and skins;

2) wool and fibre.

Article 8.14.3.

Country or zone free from RVF~~V infection~~

A country or a *zone* may be considered free from RVF~~V *infection*~~ when ~~the *disease*~~ *infection* with RVFV is notifiable in the ~~whole~~ entire country and either:

1) it meets the requirements for historical freedom in point 1 a) of Article 1.4.6.; or

2) met the following conditions:

   a) an on-going pathogen-specific *surveillance* programme in accordance with Chapter 1.4. has demonstrated no evidence of ~~RVFV~~ *infection* with RVFV in ruminants in the country or *zone* for a minimum of ten years; and

   b) during that period no indigenous human cases have occurred in the country or *zone*.

A country or *zone* free from ~~*infection* with~~ RVF~~V~~ will not lose its free status through the importation of ruminants that are seropositive, so long as they are either permanently identified as such or destined for immediate *slaughter*.

Article 8.14.4.

Country or zone infected with RVFV during the inter-epizootic period

A country or *zone* infected with RVFV, during the inter-epizootic period, is one in which virus activity is present at a low level but the factors predisposing to an epizootic are absent.

Article 8.14.5.

Country or zone infected with RVFV during an epizootic

A country or *zone* infected with RVFV, during an epizootic, is one in which *outbreaks* of RVF are occurring at an incidence substantially exceeding that of the inter-epizootic period.

Article 8.14.6.

Strategies to protect from vector attacks during transport

Strategies to protect *animals* from *vector* attacks during transport should take into account the local ecology of the *vectors* and potential *risk management* measures include:

1) treating *animals* with insect repellents prior to and during transportation;

2) *loading*, transporting and *unloading animals* at times of low *vector* activity;

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

4) using historical and current information to identify low risk ports and transport routes.

Article 8.14.7.

Recommendations for importation from countries or zones free from RVF~~V infection~~

For ruminants

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

1) were kept in a country or *zone* free from RVF~~V *infection*~~ since birth or for at least 14 days prior to shipment;

AND

2) either:

   a) were vaccinated at least 14 days prior to leaving the free country or *zone*; or

   b) did not transit through an area experiencing an epizootic during transportation to the *place of shipment*; or

   c) were protected from *vector* attacks when transiting through an area experiencing an epizootic.

Article 8.14.8.

Recommendations for importation from countries or zones infected with RVFV during the inter-epizootic period

For ruminants

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

1) showed no sign of RVF on the day of shipment;

2) met one of the following conditions:

   a) were vaccinated against RVF at least 14 days prior to shipment with a modified live virus vaccine; or

   b) were held for at least 14 days prior to shipment in a ~~mosquito-proof~~ *vector*-protected *quarantine station,* which is located in an area of demonstrated low *vector* activity. During this period the *animals* showed no clinical sign of RVF~~V *infection*~~;

AND

3) either:

   a) did not transit through an area experiencing an epizootic during transportation to the *place of shipment*; or

   b) were protected from *vector* attacks when transiting through an area experiencing an epizootic.

Annex 21 (contd)

Article 8.14.9.

Recommendations for importation from countries or zones infected with RVFV during an epizootic

For ruminants

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

1) showed no sign of RVF on the day of shipment;

2) did not originate in the area of the epizootic;

3) were vaccinated against RVF at least 14 days prior to shipment;

4) were held for at least 14 days prior to shipment in a *vector*-protected *quarantine station*, which is located in an area of demonstrated low *vector* activity outside the area of the epizootic. During this period the *animals* showed no sign of RVF;

5) either:

   a) did not transit through an area experiencing an epizootic during transportation to the *place of shipment*; or

   b) were protected from *vector* attacks when transiting through an area experiencing an epizootic.

Article 8.14.10.

Recommendations for importation from countries or zones not free from ~~infection with~~ RVFV

For semen and *in vivo* derived embryos of ruminants

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

1) showed no sign of RVF within the period from 14 days prior to and 14 days following collection of the semen or embryos;

AND

2) either:

   a) were vaccinated against RVF at least 14 days prior to collection; or

   b) were demonstrated to be seropositive on the day of collection; or

   c) testing of paired samples has demonstrated that seroconversion did not occur between semen or embryo collection and 14 days after.

Article 8.14.11.

Recommendations for importation of fresh meat and meat products from ruminants from countries or zones not free from ~~infection with~~ RVFV

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

1) ruminants which showed no clinical sign of RVF within 24 hours before *slaughter*;

2) ruminants which were slaughtered in an approved *slaughterhouse/abattoir* and were subjected to ante- and post-mortem inspections with favourable results;

3) carcasses which were submitted to maturation at a temperature above 2°C for a minimum period of 24 hours following *slaughter*.

Article 8.14.12.

Recommendations for importation from countries or zones not free from ~~infection with~~ RVF~~V~~

For milk and milk products

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

1) was subjected to pasteurisation; or

2) was subjected to a combination of control measures with equivalent performance as described in the Codex Alimentarius Code of Hygienic Practice for Milk and Milk Products.

Article 8.14.13.

Surveillance

Surveillance should be carried out in accordance with Chapter 1.4.

1) During an epizootic, *surveillance* should be conducted to define the extent of the affected area.

2) During the inter-epizootic period, *surveillance* and monitoring of climatic factors predisposing an epizootic should be carried out in countries or *zones* infected with RVFV.

3) Countries or *zones* adjacent to a country or *zone* in which epizootics have been reported should determine their RVF~~V~~ status through an on-going *surveillance* programme.

To determine areas of low *vector* activity (see Articles 8.14.8. and 8.14.9.) *surveillance* for arthropod *vectors* should be carried out in accordance with Chapter 1.5.

Examination of *vectors* for the presence of RVFV is an insensitive *surveillance* method and is therefore not recommended.

— Text deleted.

Annex 22

CHAPTER 14.7.

INFECTION WITH PESTE DES PETITS RUMINANTS VIRUS

EU position

The EU supports the adoption of this modified chapter.

[Article 14.7.1.]

[…]

[Article 14.7.20.]

Article 14.7.21.

Recommendations for importation from PPR free countries or zones

For products of sheep and goats, other than milk, fresh meat and their products

Veterinary Authorities should require the presentation of an *international veterinary certificate* attesting that the products are derived from animals ~~these *animals*~~:

1) which have been kept in a PPR free country or *zone* since birth or for at least the past 21 days;

2) which have been slaughtered in an approved *slaughterhouse/abattoir* and have been subjected to ante- and post-mortem inspections with favourable results.

[…]

[Article 14.7.34.]

– Text deleted.

Annex 33

CHAPTER 7.5.

SLAUGHTER OF ANIMALS

EU comment

The EU thanks the OIE for the considerable amount of work done in revising the article on water bath stunning of poultry which improves this section very much. The proposed new wording adequately reflects the main concerns raised by the EU. We do however have a few comments as indicated below which we ask the OIE to consider in a future revision.

[Article 7.5.1.]

[Article 7.5.2.]

[Article 7.5.3.]

[Article 7.5.4.]

[Article 7.5.5.]

[Article 7.5.6.]

Article 7.5.7.

Stunning methods

1. […]

2. […]

3. Electrical stunning

a) […]

b) Electrical stunning of birds using a waterbath

This section should be read in conjunction with Article 7.5.7.3 a) and with Article 7.5.7.5.

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 waterbath. 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 waterbath, and the design of the entrance to the waterbath, 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. The shackle size should be appropriate to fit the size of the shanks (metatarsal bones) of birds.

Birds should be hung on shackles by both legs.

Birds with dislocated or broken legs or wings should be humanely killed rather than shackled.

The duration between hanging on shackles and *stunning* should be kept to the minimum. In any event, the

time between shackling and *stunning* should not exceed one minute.

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. Electrical shock before *stunning* should be prevented.

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

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 the 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.~~

The effectiveness of the stun depends on the interaction of several parameters in the *stunning* process such as current type (alternating current (AC) or direct current (DC), amperage, voltage, frequency, electrical wave form, electrical impedance, length and width of the live electrode, contact with the earth rail, depth of bird immersion and bird dwell time in the waterbath and the size, weight, and age of the birds. AC is more effective than DC at inducing unconsciousness. Higher frequencies require higher amperage for an effective stun.

The management of these parameters to ensure all birds are effectively stunned should be set out in standard operating procedures in the *slaughterhouse/abattoir*'s dedicated plan for animal welfare, taking into account manufacturers' instructions and traceability concerns.

EU comment

The EU does not understand what the phrase "traceability concerns" relates to here. We would ask the OIE for an explanation.

As birds will have different impedances and are generally stunned in groups, the equipment should be adjusted so that the total current is the minimum required current per bird to achieve unconsciousness. The effective current for a particular *slaughterhouse/abattoir`s* operation should be adjusted through monitoring specific indicators such as voltage, calculated amperage and frequency.

EU comment

The EU asks the OIE to consider rephrasing both of the sentences of the above paragraph and to include a new third sentence:

"As birds will have different impedances and are generally stunned in groups, the equipment should be adjusted so that the total current is, at least, the minimum required current per bird to achieve unconsciousness. The effective current for a particular *slaughterhouse/abattoir`s* operation should be calculated and adjusted through monitoring specific indicators such as voltage, ~~calculated~~ amperage and frequency."

Justification:

First sentence: There is no welfare reason why the current should not be higher than the minimum. Scientific papers show that these currents rarely achieve 100% stun efficiency therefore higher currents would improve stunning efficiency.

Equipment is available to measure voltage and amperage. Current parameters thus should be measured, even though some aspects need to be calculated. The changes proposed should better reflect practices in abattoirs.

Standard procedures should be implemented to ensure that small birds do not go on the line amongst bigger birds and that these small birds are stunned separately.

~~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 at least 4 seconds. ~~While a lower current may also be satisfactory,~~ In any case, the current ~~shall~~ should ~~in any case~~ be such as to ensure that unconsciousness occurs immediately and lasts until the bird is braindead ~~has been killed by cardiac arrest or by bleeding. When higher electrical frequencies are used, higher currents may be required.~~

EU comment

The EU asks the OIE to consider rephrasing both of the above sentences:

"Birds should receive the current for at least 4 seconds. In any case, the current should be such as to ensure that unconsciousness occurs immediately and lasts until the bird is ~~brain~~dead."

Justification:

Linguistic.

To avoid discussions on when an animal is brain-dead it would be better to just refer to death.

The following table shows the minimum average current required in experimental conditions according to frequency range for AC using a sinusoidal wave form.

EU comment

The EU asks the OIE to consider deleting the words "in experimental conditions" in the above sentence:

"The following table shows the minimum average current required ~~in experimental conditions~~ according to frequency range for AC using a sinusoidal wave form."

Justification:

These figures should be read as the minimum average currents under practical conditions, i.e. in a slaughterhouse. The wording 'in experimental conditions' may give the impression that these currents would only be valid for experimental studies and could be lower under practical conditions. This impression should be avoided. (There is no scientific evidence showing that applying lower currents at these frequencies will deliver a proper stun.) Lower currents should be scientifically proven and accepted before use as is also stated in the sentence following the table.

	Minimum average current (milliamperes per bird)			
Frequency (Hz)	**Broilers**	**Turkeys**	**Layers (spent hens)**	**Ducks and geese**
From 50 to 200 Hz	100 mA	250 mA	100 mA	130 mA
From 200 to 400 Hz	150 mA	400 mA	No data available	No data available

From 400 to 1500 Hz	200 mA	400 mA	No data available	No data available

EU comment

The EU supports the inclusion of this table.

The use of other wave forms, current, amperage and voltage combinations should be scientifically validated to demonstrate effective *stunning* (immediate onset of unconsciousness until death) prior to implementation.

The means of assessing the welfare outcomes of the *stunning* process should also be set out in the standard operating procedures in the *slaughterhouse/abattoir's* plan for animal welfare. The effectiveness of *stunning* should also be regularly monitored by assessing the following indicators and their corresponding outcomes of consciousness at two key stages: (a) between the exit from the waterbath stunner and neck cutting and (b) during bleeding. It is better if bird welfare monitoring is focused on detecting consciousness. A list of selected indicators is proposed to check for signs of consciousness. The staff responsible for welfare outcome monitoring should choose the most appropriate set of indicators (more than one, but as many as practical) from the list according to their expertise and the available infrastructure in the *slaughterhouse/abattoir*. Assessment using a single indicator may be misleading. Multiple indicators should be assessed in order to reach a reliable conclusion. Ideally, at any time after application of an electric current, birds should not display signs of consciousness. In any event the number of indicators used must demonstrate the required welfare outcome.

Indicators to confirm unconsciousness at slaughter are as follows:

a) presence of tonic seizures

b) absence of rhythmic breathing

c) absence of spontaneous blinking

d) absence of corneal or palpebral reflex

e) absence of vocalisation

f) absence of wing flapping

g) absence of spontaneous swallowing

h) absence of head shaking

The first three indicators in the list (tonic seizures, absence of rhythmic breathing, absence of spontaneous blinking) are considered the most important and practical indicators before exsanguination.

If the indicator shows that an effective stun is not being delivered then the operator should take immediate corrective action by adjusting the stun parameters to ensure birds are rendered immediately unconscious until death by bleeding occurs. In case of repetitive failure, the management of the *slaughterhouse/abattoir* should develop an improvement plan.

Indicators b) and f) (absence of rhythmic breathing, absence of wing flapping) are considered the most important and practical indicators during bleeding.

~~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,~~ Whatever cutting system is used, a manual back-up system to should be in place to ensure complete severance of the carotid arteries ~~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~~.

EU comment

The EU asks the OIE to consider rephrasing the first sentence of the above paragraph:

"Whatever cutting system is used, a manual back-up system ~~to~~ should be in place to ensure complete severance of the carotid arteries."

Justification:

Linguistic

No conscious or live birds should enter the scalding tank.

A sampling and monitoring programme to demonstrate that the relevant welfare outcomes are attained should be developed and included into the dedicated plan for animal welfare of the *slaughterhouse/abattoir* (Article 7.5.2. point 1).

~~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. The height of the waterbath stunner should be adjusted according to the size of birds to ensure even the small birds are immersed in the water bath up to the base of the wings.~~

~~Waterbath *stunning* equipment should be fitted with a device which displays and records the details of the electrical key parameter.~~

~~**Minimum current for *stunning poultry* when using 50Hz is as follows:**~~

~~**Species**~~	~~**Current (milliamperes per bird)**~~
~~Broilers~~	~~100~~
~~Layers (spent hens)~~	~~100~~
~~Turkeys~~	~~150~~
~~Ducks and geese~~	~~130~~

~~**Minimum current for stunning poultry when using high frequencies is as follows:**~~

~~**Frequency (Hz)**~~	~~**Minimum current (milliamperes per bird)**~~	
	~~**Chickens**~~	~~**Turkeys**~~
~~From 50 to 200 Hz~~	~~100 mA~~	~~250 mA~~
~~From 200 to 400 Hz~~	~~150 mA~~	~~400 mA~~
~~From 400 to 1500 Hz~~	~~200 mA~~	~~400 mA~~

4. […]

5. […]

[Article 7.5.8.]

- - - - - - - - - - - - - -

—— Text deleted.

Annex 34

NOTE:

- The revised Article 8.8.4. has been proposed for Member Countries comments in the Code Commission's September 2015 meeting report.
- The rationale for the proposed new Article 8.8.4bis is contained in the February 2016 report of the Scientific Commission and the ad hoc Group commissioned to review it. (http://www.oie.int/en/international-standard-setting/specialists-commissions-groups/scientific-commission-reports/meetings-reports/)

CHAPTER 8.8.

INFECTION WITH FOOT AND MOUTH DISEASE VIRUS

[…]

EU comment

As indicated in its previous comments, the EU supports the proposed changes to Article 8.8.4.

The EU can support the draft Article 8.8.4.bis, even if the concept of "free compartment where vaccination is practiced" seems somewhat paradoxical. Indeed, the very concept of compartmentalisation as described in Chapter 4.3. relies on the management of a distinct animal subpopulation free of (a) certain pathogen(s) based on biosecurity measures. In order to gain and then maintain such a status, the animal subpopulation is separated from other, (possibly) infected populations by way of comprehensive management measures. The use of vaccination to gain and maintain such a status would therefore appear superfluous and could even hinder the establishment and maintenance of a compartment free of a disease such as FMD as it could mask infection; it thus appears to go against the concept of compartmentalisation and could be detrimental to the trust in the biosecurity system of such a compartment.

However, even if monitoring of FMDV circulation can be very difficult in particular in small vaccinated populations, the EU recognises that compartments of domestic ruminants which are usually kept outdoors cannot be safeguarded 100% from e.g. airborne FMDV incursions in countries or zones where the disease is endemic in e.g. wildlife populations.

Provided that appropriate laboratory capacity is readily available and intensive surveillance is practiced within the 10 km surrounding the compartment as well as within the compartment to prove absence of FMDV circulation, possibly including the use of sentinel animals, this new concept of "compartment free from FMD where vaccination is practiced" could be accepted for inclusion in the Code chapter on FMD. Indeed, if applied using stringent conditions and under a transparent and bilateral agreement between the respective trading partners, it could provide new intra-regional trade opportunities for certain developing countries and regions, while at the same time encouraging official control programmes in the countries concerned and enhancing the performance of their veterinary services in general.

Article 8.8.4.

~~**FMD free compartment**~~ **Compartment free from FMD**

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

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

1) have a record of regular and prompt animal *disease* reporting and, if not ~~FMD~~ free, have an *official control programme* and a *surveillance* system for FMD in place in accordance with Articles 8.8.40. to 8.8.42. that allows knowledge of the prevalence, distribution and characteristics of FMD in the country or *zone*;

2) declare for the ~~FMD~~ free *compartment* that:

   a) there has been no *case* of FMD during the past 12 months;

   b) no evidence of *infection* with FMDV has been found during the past 12 months;

   c) *vaccination* against FMD is prohibited;

   d) no animal vaccinated against FMD within the past 12 months is in the *compartment*;

   e) animals, semen, embryos and animal products may only enter the *compartment* in accordance with relevant articles in this chapter;

   f) documented evidence shows that *surveillance* in accordance with Articles 8.8.40. to 8.8.42. is in operation;

   g) an *animal identification* and *traceability* system in accordance with Chapters 4.1. and 4.2. is in place;

3) describe in detail:

   a) the animal *subpopulation* in the *compartment*;

   b) the *biosecurity plan* to mitigate the risks identified by the *surveillance* carried out in accordance with point 1.

The *compartment* should be approved by the *Veterinary Authority*. The first approval should only be granted when no *case* of FMD has occurred within a 10 ~~ten~~ kilometre radius of the *compartment* during the past three months.

Article 8.8.4bis.

Compartment free from FMD where vaccination is practised

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

A Member Country wishing to establish a *compartment* free from FMD where vaccination is practised should:

1) have a record of regular and prompt animal *disease* reporting and, if not free, have an *official control programme* and a *surveillance* system for FMD in place in accordance with Articles 8.8.40. to 8.8.42., which allows knowledge of the prevalence, distribution and characteristics of FMD in the country or *zone*;

2) declare for the free *compartment* where vaccination is practised that for the past two years:

   a) there has been no *case* of FMD;

   b) there has been no evidence of transmission of FMDV;

   c) compulsory systematic *vaccination* has been carried out using a vaccine that complies with the standards described in the *Terrestrial Manual*, including appropriate vaccine strain selection. The *vaccination* coverage and population immunity have been closely monitored;

   d) animals, semen, embryos and animal products have only entered the *compartment* in accordance with relevant articles in this chapter;

e) regular clinical, serological and virological *surveillance* in accordance with Articles 8.8.40. to 8.8.42. has been in operation, so as to detect *infection* at an early stage with a high level of confidence. This should be supported by documented evidence;

f) an *animal identification* and *traceability* system in accordance with Chapters 4.1. and 4.2. has been in place;

3) describe in detail:

a) the animal *subpopulation* in the *compartment*;

b) the *biosecurity plan* to mitigate the *risks* identified by the *surveillance* carried out according to point 1) and the *vaccination* plan;

c) implementation of point 2c) and 2e).

The *compartment* should be approved by the *Veterinary Authority*. The first approval should only be granted when no *case* of FMD has occurred within a 10-kilometre radius of the *compartment* during the past three months.

[…]

An extract from the report of *ad hoc* Group on the evaluation of foot and mouth disease status of Member Countries:

"Upon reviewing Member Countries' comments, the Group felt that there was a need to include provisions for a compartment where vaccination is practised given that stricter provisions for surveillance and biosecurity measures would be in place to ensure early detection of infection and absence of undetected infection. The Group highlighted that the establishment of such compartments would support bilateral trade agreements and allow access to regional/international markets. The Group drafted a specific draft article (Article 8.8.4bis.) to propose the concept of compartment free with vaccination."

— Text deleted.

Annex 39

FUTURE WORK PROGRAMME FOR THE TERRESTRIAL ANIMAL HEALTH STANDARDS COMMISSION

EU comment

The EU thanks the Code Commission for having considered previous comments regarding its work programme and priorities and supports the updated future work programme as presented below. The EU notes with appreciation the further developed format of the first table below, which significantly improves ease of use and transparency.

The EU especially looks forward to future work on the OIE Code chapter on BSE. Indeed, the adoption of the revised Terrestrial Manual chapter on BSE foreseen in May 2016 will allow having a good basis for differentiating in the Code the recommendations applicable for Atypical BSE cases compared to Classical BSE cases. The EU therefore encourages the OIE to continue without delay the work that had started last year on the revision of the OIE Code chapter on BSE.

Also the upcoming adoption of the revised Terrestrial Manual chapter on scrapie will be very important. Indeed, the EU considers that, as for BSE, a revision of the scrapie chapter of the OIE Code should be launched as a follow-up to that revision of the Manual, with a view to take into account genetic resistance of sheep and to clarify the seven-year rule for scrapie free countries or zones.

The EU also looks forward to future work on the Bluetongue chapter as regards the exclusion of non-pathogenic serotypes from the case definition, as well as on the new horizontal chapters on disease control including vaccination.

As regards the ongoing work on the Code chapter on *Mycobacterium tuberculosis* complex, the EU would like to highlight the importance of OIE's further assessment regarding the inclusion of New World Camelids, both in the relevant OIE Code and Manual chapters. This is particularly important in light of the increasing international trade of species such as alpacas which can indeed be infected with *Mycobacterium tuberculosis* complex pathogens.

Finally, the EU would like to stress again its continued commitment to participate in the work of the OIE and to offer all technical support needed by the Code Commission and its *ad hoc* groups for future work on the Terrestrial Code.

General Topic		
Detailed issue or action (By priority order)	**By whom to be managed**	**Status and further steps**
Restructuring of the *Terrestrial Code*, including harmonisation of the *Terrestrial* and *Aquatic Codes*		
1) Work with AAHSC towards harmonisation, as appropriate, of the horizontal parts of the *Codes,* notably Glossary, User's Guide, notification and listed diseases, and section 6 Veterinary Public Health (e.g. AMR)	TAHSC & AAHSC & HQs	Ongoing

General Topic		
Detailed issue or action (By priority order)	**By whom to be managed**	**Status and further steps**
2) Work with BSC for accurate disease description and diagnostic in the *Manual* and case definitions in the *Code* and names of diseases and country and zone disease status	TAHSC & BSC & HQs	Ongoing
3) Revision and formatting of chapters (articles numbering, tables and figures), especially of Section 7	TAHSC & AWWG &HQs	Ongoing
4) OIE policy on wildlife	TAHSC & SCAD & WWG& HQs	Ongoing
5) Use of "Veterinary Services" and "Veterinary Authorities" and "Competent Authorities" in the *Code*	TAHSC & AAHSC & HQs	Ongoing
Glossary		
1) OIE standard, OIE guideline	TAHSC & AAHSC & BSC & SCAD & HQs	Reviewed and send for further MC
2) stamping-out policy	TAHSC	Reviewed and proposed for adoption
3) 'casings'	TAHSC	Reviewed and proposed for adoption
4) vaccination, vaccination programme, routine vaccination, emergency vaccination	TAHSC & BSC & SCAD & AHG & HQs	Pending next meeting of AHG
5) zone, free zone, infected zone, containment zone, protection zone	TAHSC & SCAD & HQs	Send for MC
6) Add reptiles to the definition of 'animal'	TAHSC	Proposed for adoption
Horizontal issue not yet in the *Terrestrial Code*		
1) CH on vaccination strategies	TAHSC & BSC & SCAD & AHG & HQs	Pending next AHG
2) CH on contingency planning, outbreak management and stamping-out policy	TAHSC & HQs	Preliminary discussions
3) CH on *Salmonella* in pigs and in cattle	TAHSC & APFSWG	reviewed and send for further MC
4) CH on working equids	TAHSC & AWWG	Draft CH (section 7): reviewed and proposed for adoption
***Terrestrial Code* texts on horizontal issues in need of revision: Section 1 Notification**		
1) Disease notification CH 1.1.	TAHSC & SCAD & AAHSC & HQs	Proposed for adoption
2) Criteria for listing CH 1.2. and CH 1.2.bis	TAHSC & SCAD & AAHSC & HQs	Proposed for adoption
3) Prescribed tests CH 1.3. delete CH because covered in *Manual*	TAHSC & BSC	Proposed for adoption
4) CH 1.4. on Animal Health Surveillance	TAHSC & SCAD	Send for MC
5) CH 1.6. on Status: reorganisation	TAHSC & SCAD & HQs	Ongoing

General Topic		
Detailed issue or action (By priority order)	**By whom to be managed**	**Status and further steps**
***Terrestrial Code* texts on horizontal issues in need of revision: Section 2 Risk analysis**		
Draft new CH on criteria for assessing safe commodities	TAHSC	Send for further MC
***Terrestrial Code* texts on horizontal issues in need of revision: Section 3 Veterinary Services**		
Revision of CHs of Section 3 in the light of the return of experience of the PVS Pathway	TAHSC &HQs	Preliminary discussions
***Terrestrial Code* texts on horizontal issues in need of revision: Section 4 Disease control**		
1) CH 4.3. on zoning	TAHSC & SCAD & HQs	Send for MC
2) CH 4.6. on semen collection	TAHSC &BSC	Pending experts' advice
3) CH 4.7. and 4.8. on embryos	TAHSC & BSC	Pending experts' advice
4) Global restructuring of Section 4	TAHSC & HQs	Preliminary discussion
***Terrestrial Code* texts on horizontal issues in need of revision: Section 5 Trade measures**		
CH 5.3. on SPS agreement	TAHSC &HQs	Reviewed and Send for further MC
***Terrestrial Code* texts on horizontal issues in need of revision: Section 6 Veterinary Public Health**		
New Introductory CH on Section 6	TAHSC & APFSWG	Preliminary discussion
Revision of CH 6.1.	TAHSC & APFSWG	Send for MC
Revision of CH 6.2.	TAHSC & APFSWG	Pending WG report
***Terrestrial Code* texts on horizontal issues in need of revision: Section 7 Animal welfare**		
1) CH 7.11. on dairy cattle production systems	TAHSC & AWWG	Proposed for adoption
2) CH 7.5. on slaughter		Proposed for adoption and for MC
3) CH 7.6. on killing		Proposed for adoption
4) CH 7.10. on broiler chicken production systems		Proposed for adoption
Diseases issues not yet in the *Terrestrial Code*		
1) New CH 15.X. on PRRS	TAHSC & SCAD	Send for MC
2) Non-tsetse transmitted Trypanosomosis (new CH on Surra and revision of CH on Dourine)	TAHSC & SCAD & AHG	Pending AHG
3) Crimean Congo hemorrhagic fever	TAHSC & HQs	Preliminary discussion
***Terrestrial Code* texts on diseases in need of revision: Sections 8 to 15, by priority order**		

General Topic		
Detailed issue or action (By priority order)	**By whom to be managed**	**Status and further steps**
Revised CH 8.8. on FMD	TAHSC & SCAD & AHG	Pending AHG and 2 Articles send for MC
Revised CH 14.7. on PPR	TAHSC	Proposed for adoption
Revised CH 8.16. on Trichinella	TAHSC	Proposed for adoption
Revised CH 15.1. on ASF	TAHSC	Send for further MC
Revised CH 12.10. on glanders	TAHSC	Pending experts' advice on surveillance
Revised CH 11.4. on BSE	TAHSC & SCAD & BSC & AHG	Pending AHG
Update and harmonise CH on vector-borne diseases: BT, EHD, RVF	TAHSC & HQs	Proposed for adoption and pending experts' advice
New CH 8.X. on tuberculosis to merge CH 11.5. & CH 11.6.	TAHSC	Pending experts' advice
CH 15.3. on *T. Solium*	TAHSC & APFSW	Revised and proposed for adoption
Update CH 11.11. on lumpy skin disease	TAHSC	Send for MC
Update CH 10.4. on avian influenza viruses	TAHSC & HQs	Pending work on zoning, outbreak management and vaccination
Update CH 10.5. on avian mycoplasmosis	TAHSC & HQs	Pending experts' opinion
Update/Revise CH 11.12. on theileriosis	TAHSC & SCAD	Pending AHG
Update CH 14.8. on scrapie	TAHSC	Review MC, seek expert opinion

Note: MC: Member Countries' comments; CH: chapter; Q: questionnaire; SURV: surveillance; ITD: International Trade Department; S&T Dept: Scientific and Technical Department; SIS: World Animal Health Information and Analysis Department.

Annex 39 (contd)

ITEM, ANNEX, CHAPTER NUMBERS AND CURRENT STATUS

Item	Annex	Chapter	Title	Action	Adoption at GS84
1			General comments	-	-
2	4		User's guide	A	O
3	5/23		Glossary	A/C	O/X
4	6	1.1.	Notification of diseases, infections and infestations	A	O
5	7	1.2.	Criteria for listing diseases	A	O
6	8	1.2.bis	Diseases listed by the OIE	A	O
7	9	1.3.	Prescribed and alternative diagnostic tests for OIE listed diseases	A	O
8	24	1.4.	Animal health surveillance	C	X
8	10	3.2.14	Evaluation of Veterinary Services	A	O
9	25	4.3.	Zoning and compartmentalisation	C	X
10	26	5.3.	OIE procedures relevant to the WTO/SPS Agreement	C	X
11	27	2.X.	Draft new chapter on criteria for assessing the safety of commodities	C	X
12	32	6.1.	The role of the veterinary services in food safety	C	X
13	11	6.8.	Monitoring of the quantities and usage patterns of antimicrobial agents used in food-producing animals	A	O
14	28/30	6.X.	Draft new chapter on prevention and control of *Salmonella* in commercial cattle production system	C	X
	29/31	6.Y.	Draft new chapter on prevention and control of *Salmonella* in pig production systems	C	X
	12	8.16.	Infection with *Trichinella* spp.	A	O
	13	15.3.	Infection with *Taenia solium*	A	O
15	14	Art 7.5.7. Point 2	Slaughter of animals	A	O
	33	Art 7.5.7.Point 3	Slaughter of animals	C	X
	15	Arts 7.6.6 - 7.6.18	Killing of animals for disease control purposes	A	O
	16	Art 7.10.4.	Animal welfare and broiler chicken production systems	A	O
	17	7.11.	Animal welfare and dairy cattle production systems	A	O
	18	7.X.	Draft new chapter on the welfare of working equids	A	O
16	19	8.3.	Infection with bluetongue virus	A	O
	20	8.7.	Infection with epizootic hemorrhagic disease virus	A	O
	21	8.14.	Infection with Rift Valley fever virus	A	O
17	34	Art 8.8.4.bis	Infection with foot and mouth disease virus	C by 31 May 2016	X
18	35	8.X.	Infection with *Mycobacterium tuberculosis* complex	C	X
19		10.4.	Infection with avian influenza viruses	D, E	X
20	36	11.11.	Infection with lumpy skin disease	C	X
21		12.10.	Infection with *Burkholders mallei* (Glanders)	E	X
22	22	Art 14.7.21.	Infection with Peste des petits ruminants virus	A	O
23	37	15.1.	Infection with African swine fever virus	C	X
24	38	15.X.	Draft new chapter on Infection with porcine reproductive and respiratory syndrome virus	C	X
25	39		Work programme	C	X
26	40		Report of AHG meeting on Salmonella in pigs and cattle	I	X
27	41		Report of APFSWG meeting	I	X

28	42		Report of AHG meeting on slaughter of animals		

A: proposed for adoption at 84th General Session; C: For Member comments; E: under expert consultation (*ad hoc* groups, Specialist Commissions, etc.), D: deferred to Sep 2015 meeting; I: For Member Country information.

List of abbreviations	
AAHSC	Aquatic Animal Health Standards Commission
AHG	ad hoc Group
AHS	African horse sickness
APFSWG	Animal Production Food Safety Working Group
AWWG	Animal Welfare Working Group
EHD	Epizootic haemorrhagic disease
FMD	Foot and mouth disease
PPR	Peste des petits ruminants
PRRS	Porcine reproductive and respiratory syndrome
SCAD	Scientific Commission for Animal Diseases
TAHSC	Terrestrial Animal Health Standards Commission