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REPORT OF THE OIE *AD HOC* GROUP ON ANIMAL WELFARE AND PIG PRODUCTION SYSTEMS¹

Paris, 16–18 January 2018

1. Welcome and introduction

The OIE *ad hoc* Group on Animal Welfare and Pig Production Systems (the *ad hoc* Group) held its fourth meeting at the OIE Headquarters on 16–18 January 2018.

The members of the *ad hoc* Group and other participants at the meeting are listed at [Annex I](#).

Dr Leopoldo Stuardo, Chargé de mission of the Standards Department, welcomed and thanked the *ad hoc* Group on behalf of the Director General for their agreement to work with the OIE on this important topic.

Dr Stuardo asked Members to carefully consider all comments provided by OIE Member Countries and partner organisations in the working document presented for this meeting and reminded them of the need to provide a clear rationale, particularly when not accepting a comment.

Dr Stuardo indicated that the report of the meeting will be presented to the Terrestrial Animal Health Standards Commission (Code Commission) in February 2018, and as it was mentioned in the Code Commission report of its September 2017 meeting, it was anticipated that this chapter will be proposed for adoption at the next OIE General Session in May 2018.

The draft agenda was adopted without modifications. The adopted agenda is at [Annex II](#). Dr Birte Broberg, chair of the *ad hoc* Group, opened the meeting thanking the members for their dedicated work, and the Member Countries and organisations in sending their constructive comments.

2. Review of Member Countries comments on the draft chapter on Animal Welfare and Pig Production Systems

The *ad hoc* Group developed the revised draft Chapter 7.X, which is included as [Annex III](#) for consideration by the Code Commission at its February 2018 meeting.

Some OIE Members and partner organisations made proposals without providing a (scientific) rationale, making it difficult to take these comments into account.

Comments were received from Argentina, Australia, Canada, China, Japan, Malaysia, New Caledonia, New Zealand, Singapore, Switzerland, United States of America (USA), OIE Members of the Region of the Americas, European Union (EU), International Coalition for Animal Welfare (ICFAW) and African Union-Interafrican Bureau for Animal Resources (AU-IBAR).

During the revision of the chapter and in response to several Member Countries comments, the *ad hoc* Group made various changes throughout the text to improve grammar, syntax, and clarity.

¹ Note: This *ad hoc* Group report reflects the views of its members and may not necessarily reflect the views of the OIE. This report should be read in conjunction with the February 2018 report of the Terrestrial Animal Health Standards Commission because this report provides its considerations and comments. It is available at <http://www.oie.int/en/international-standard-setting/specialists-commissions-groups/code-commission-reports/meetings-reports/>

General comments

In response to a Member Country general comment, the *ad hoc* Group reviewed the scientific references and added additional references to align them with the corresponding statements. However, the *ad hoc* Group at the same time clarified that references are only needed for indicators that are less recognised or contentious. These references will be removed when the chapter is adopted and published.

Article 7.X.1.

The *ad hoc* Group did not agree with the suggestion of Member Countries to change the title of the chapter to “Animal welfare and commercial pig production systems”, as this would be inconsistent with the title of other chapters on the welfare of farm animals.

The *ad hoc* Group did not agree with the addition of text in relation to the provision of foraging material for behavioural needs, as this is already addressed in Article 7.X.10. in the form of recommendations on environmental enrichment.

With reference to the comments of a Member Country to modify the fourth paragraph in three different sections. The *ad hoc* Group did not agree to add the words “and unvarying”, as according to Mason (2006), and based on the literature, many stereotypies show significant variation in action pattern. Based on recent research (reported in Mason and Rushen, 2006, pg. 327), Mason (2006) concluded that:

“captive animals show diverse forms of repetitive behaviour which baffle, intrigue or worry us. Many broadly fit the classic, decades-old definition of ‘stereotypy’, in being ‘unvarying and repetitive . . . with no apparent goal or proximate function’ (see previous chapters). However, different cases meet this description to very different extents. Some are highly unvarying: route tracing Amazon parrots and polar bears, for instance, may place their feet in exactly the same location each time they repeat a circuit (e.g. Wechsler, 1991; Garner *et al.*, 2003b); but in others, in contrast, a variety of postures and movements are employed (as in self-biting or hair-plucking, cf. e.g. Chapters 4–6), animals seeming to have an inflexibility of goal rather than an inflexibility of action pattern.”

Concerning the deletion of the reference to the purpose or function of this behaviour and the addition of a new sentence in relation to the use of stereotypies as a welfare indicator, the *ad hoc* Group agreed with the proposal but with modifications. In considering the practical and ethical implications of stereotypic behaviour, Mason (2006) argues that:

“environments that induce stereotypies typically also reduce animal welfare. However, at the individual level, ‘coping’, and the ‘scar-like’ effects of routine-formation and early experience, may eliminate close correspondence between the behaviour and underlying stress and frustration. Indeed paradoxically, highly stereotypic individuals often fare better in these inadequate environments than their less active peers: patterns that could reflect coping, or perhaps instead the activity-reducing effects of some other psychological or physical conditions.”

On the same topic, the *ad hoc* Group proposed to add a new paragraph under the section of behaviour in Article 7.X.4. to reflect that certain behaviours could be useful to cope in certain situations and some indication to use stereotypy as a welfare measure.

In relation to a Member Country comment on the same paragraph, the *ad hoc* Group agreed with part of the proposal, the comment related to social structure was not included as the *ad hoc* Group did not find any evidence in the reference provided by the Member Country to support this as an effective strategy.

The *ad hoc* Group agreed with the inclusion of the example of fighting proposed by a Member Country as it helps to better explain the concept of aggressive behaviour.

The *ad hoc* Group agreed with a Member Country proposal to include a definition of “play behaviour”, which is a concept that is used throughout the recommendations in this chapter. However, they suggested a different wording from the one proposed and included an appropriate reference.

Article 7.X.3

In respect of the definition of outdoor systems, the *ad hoc* Group did not agree with the inclusion of new text to require both shelter and shade, because the availability of shelter is not applicable to all outdoor production systems.

On the same topic the *ad hoc* Group did not agree with the modification proposed by another Member Country to make a reference to the scale of production, as this suggestion did not improve the text. The *ad hoc* Group also did not agree to use the word “confined”.

Article 7.X.4.

Regarding to the comment of a Member Country on the consistency of the use of some concepts in the French version, the *ad hoc* Group recommended the OIE Headquarters to check and harmonise the terminology where necessary.

The *ad hoc* Group did not agree with the suggestion of some Member Countries to use either the word “criteria” or “measurables” throughout the text of the Chapter, as the existing wording had the agreement of several Member Countries and the *ad hoc* Group.

The *ad hoc* Group agreed with the proposal of a Member Country to add a reference on the provision of resources to be consistent with the draft chapter on animal welfare and laying hen production systems. The last sentence was also modified to improve clarity.

In relation to the proposal of a Member Country to replace the word “thresholds” with “reference values”, the *ad hoc* Group did not agree with this proposal, as the existing text provides enough flexibility to determine thresholds according to the conditions or context in which they will be used.

1. Behaviour

The *ad hoc* Group agreed with the suggestion of a Member Country to relocate a paragraph to the beginning of point 1 on Behaviour. They also modified the original proposal to include examples of behaviour where there is sufficient scientific evidence that they appear to be indicators of good pig welfare.

The *ad hoc* Group did not agree to delete the word “health” in relation to potential animal welfare problems, at the beginning of the first paragraph, as it is consistent with the terminology used by the OIE in other animal welfare chapters and in general when referring to the OIE work on animal welfare.

The *ad hoc* Group considered that it was not appropriate to delete the word “stereotypic” in the second paragraph of the Behaviour point, proposed by a Member Country, as this behaviour can be an indicator of a present problem or at least a past problem that has been resolved. Furthermore, the *ad hoc* Group modified the paragraph to include additional examples of behaviours indicative of poor welfare with corresponding scientific references.

The *ad hoc* Group did not agree with the proposal of a Member Country to modify this paragraph as it was already amended based on a previous comment. Nevertheless, they modified the original proposal to include specific examples of positive behaviours where there is sufficient scientific evidence that they appear to be indicators of good welfare in pigs.

The *ad hoc* Group discussed the need to consider the practical and ethical implications of stereotypic behaviour (Mason, 2006). The *ad hoc* Group proposed to include a new paragraph under this section to reflect the idea that certain behaviours could be useful to cope in certain situations and some indication to use stereotypies as a welfare measure.

2. Morbidity rates

In relation to the comment of a Member Country requesting information on the use of thresholds, the *ad hoc* Group indicated that thresholds used in this chapter should be defined according to multiple variables including, for example, regional differences, herd health and climate. To provide further information, the *ad hoc* Group added these examples in the first paragraph of Article 7.X.4., and provided some references, on the use of scoring systems for body condition, lameness and injuries under point 2 Mortality rates.

The *ad hoc* Group did not agree with the proposal of a Member Country to insert “or transport” after “slaughterhouse/abattoir”, as it is neither practical nor common practice to collect information during transport.

4. Changes in weight and body condition

The *ad hoc* Group did not agree with a Member Country proposal to add a new statement in relation to using body condition scoring as an indicator of good welfare, as it is already mentioned in the second paragraph of this section.

5. Reproductive efficiency

The *ad hoc* Group did not agree with a comment of a Member Country to use “inefficiency” instead of “efficiency” as the use of the term was clarified in the second paragraph of the section (poor reproductive efficiency).

Regarding the proposal of an Organisation to include ‘high mortality before weaning’ as an example of poor reproductive efficiency, the *ad hoc* Group did not agree as it is not a measure of reproductive efficiency and is included under the criteria of mortality.

6. Physical appearance

The *ad hoc* Group did not agree with the suggestion of a Member Country to include examples of general “aspects of physical appearance” as the attributes mentioned are not related to animal welfare problems.

Regarding the request of a Member Country to receive guidance on the acceptable range for body condition, the *ad hoc* Group included a new reference in the draft text.

Upon the request of an Organisation, the *ad hoc* Group reinstated sunburn as an example of skin decolouration to emphasise its importance in some production systems and to be consistent with articles related to housing and heat stress.

In response to a general comment of a Member Country regarding the need to provide the scientific references for each of the examples listed, the *ad hoc* Group recalled that references are only needed for indicators that are less recognised or contentious.

The *ad hoc* Group did not agree with the addition proposed by a Member Country in relation to animal handling and welfare outcomes because it is already mentioned in the following paragraph and in Article 7.X.7. on handling and inspection. Nevertheless, the *ad hoc* Group considered it useful to include in Article 7.X.7. some of the factors related to stockpersons or characteristics associated with positive handling and the reference mentioned in the comment and add a new paragraph at the beginning of the before mentioned article.

In reference to the proposal of a Member Country to include wording related to the lack of “habitual and humane” contact, the *ad hoc* Group did not agree, as these aspects are included in the revised version of Article 7.X.6. on training of personnel and in the recommendation in Article 7.X.7. on handling and inspection.

Regarding the suggestion of a Member Country to remove the reference to fractures just on legs, the *ad hoc* Group agreed with the comment as fractures can occur in other body parts, as mentioned in the justification provided.

9. Complications from common procedures

In response to several proposals of Member Countries to make minor editorial changes to this section, the *ad hoc* Group did not agree that the proposals improved the clarity of the text.

Regarding a comment of a Member Country, as mentioned previously, the *ad hoc* Group did not consider it necessary to provide the scientific references for each one of the examples listed.

Article 7.X.5.

The suggestion of a Member Country to add “(or measurable)” was accepted to ensure consistency with the other articles of this chapter.

Article 7.X.7.

The *ad hoc* Group agreed to add a new sentence at the beginning of Article 7.X.7. in response to an earlier suggestion of Member Country to include some (stockperson) factors (or characteristics) associated with positive handling.

The *ad hoc* Group did not agree with the comment of a Member Country to delete the reference to situations where pigs are fully dependent on humans, as there are some extensive production systems where it is not feasible to inspect the pigs each day.

The *ad hoc* Group agreed with the comment of a Member Country to add “without delay” to the text to emphasise the need to provide appropriate treatment in a timely manner.

Regarding the comment of Member Countries, the *ad hoc* Group did not agree with the need to mention that piglets should not be thrown as it was already covered in the examples given for improper or aggressive handling of the pigs.

The *ad hoc* Group agreed with the suggestion of a Member Country to include a sentence at the end of the fourth paragraph to highlight the importance of releasing pressure to reduce the level of threat of injury when handling pigs.

Article 7.X.8.

The *ad hoc* Group agreed with the suggestion of a Member Country to add a sentence regarding staff training.

In relation to the suggestion of some Member Countries to replace the word ‘in’ by ‘on’ in the second line of the first paragraph of the article on painful procedures the *ad hoc* Group did not agree as the suggestion do not improve the text.

Regarding the suggestion of an Organisation to add a new sentence at the end of the second paragraph of Article 7.X.8. concerning the need for supervision of a veterinarian when using analgesia or anaesthesia. The *ad hoc* Group did not accept the suggestion as the proposed sentence is included in the following paragraph.

In response to a comment of a Member Country and an Organisation to include wording to emphasise the possibility of using analgesia and anaesthesia at the same time, the *ad hoc* Group agreed with the proposal to insert the words “or both”. Furthermore, this proposal generated consensus among other Member Countries which commented on the same point.

The *ad hoc* Group did not agree to specify the use of local anaesthesia, as was proposed by a Member Country as the *ad hoc* Group considered that anaesthesia could be provided in other ways, and not only locally.

The *ad hoc* Group agreed with the suggestion of a Member Country to add the word “surgically”, as it was considered that the addition improved the clarity of the text.

Regarding some Member Countries comments referring to the use of anaesthesia and analgesia to conduct an ovariectomy. The *ad hoc* Group did not agree with the questioning of the relevance of the statement “Ovariectomy should not be performed without anaesthesia and prolonged analgesia”, as there are several examples of practices mentioned in the present chapter that could be defined as the natural way of behaving, but for their relevance it is important to not forget to include the proper management of this surgical procedure or even mention possible alternatives.

The *ad hoc* Group did not agree with the proposal of a Member Country to replace “should” by “must” concerning the use of anaesthesia and analgesia when performing an ovariectomy, as the proposed language was considered too restrictive.

The *ad hoc* Group did not agree with the proposal of Member Countries to include two new paragraphs in relation to tail docking and teeth trimming and grinding, because they are already considered in other parts of Article 7.X.8. on Painful procedures, specifically in the introduction and in the paragraph in which recommended options for enhancing animal welfare in relation to these procedures are given, including the 3Rs.

Article 7.X.9.

The *ad hoc* Group agreed with a Member Country proposal to modify the title of Article 7.X.9. to improve its clarity.

With reference to the suggestion of several Member Countries to reinstate the words “and behavioural” in the second bullet point in relation to provisions for feed and nutrients, the *ad hoc* Group reiterated the justification for not accepting this proposal as it is not clear what is meant by “behavioural requirements” and it is inconsistent with other OIE *Terrestrial Code* chapters on animal welfare.

Also responding to the proposal of some Member Countries to delete the third bullet point of this section, the *ad hoc* Group did not agree. References to support the inclusion of the third point can be found in Bergeron *et al.* (2006), where the editorial introduction concludes that:

“for sows (as with other ungulates) low fibre, high-concentrate diets that require little food-searching behaviour and consummatory behaviours, like chewing, result in unfulfilled motivations to perform these natural foraging activities, leading to increased oral stereotypies (oral stereotypic licking, bar-biting and sham-chewing). Also, it has been shown in several studies that high-fibre diets, similar in dietary energy and major nutrient levels, fed to sows markedly increased feeding time and that this increased feeding time accounted for much of the differences in level of stereotypies between diets.”

Thus, these results support the view that expressing foraging and feeding behaviour can reduce stereotypies. (Robert *et al.*, 1993, 1997; Brouns *et al.*, 1994; Ramonet *et al.*, 1999; Bergeron *et al.*, 2006).”

Consequently, the *ad hoc* Group added the words, ‘and feeding behaviours’ to the bullet point on foraging.

In response to Member Countries comments in relation to the importance of dietary aspects on the occurrence of gastric ulcers. The *ad hoc* Group agreed with the proposal to modify the statement to acknowledge that multiple dietary factors can influence gastric ulcers and added a new scientific reference which highlights the importance of providing adequate dietary fibre, and the reduction of crude protein (Jha and Berrocos, 2016).

Regarding some Member Countries comments to clarify the descriptor for the water provision for pigs, the *ad hoc* Group decided to modify the text, and to just recommend the supply of water, without giving any kind of descriptor to it. The *ad hoc* Group noted that the conditions to be met by the water supply are indicated further on in the same paragraph.

The *ad hoc* Group agreed with the comment of a Member Country to include a sentence on the necessary flow rates for water in pig production.

The *ad hoc* Group agreed to move the sentence related to diet selection in outdoor systems (Point 1 of Article 7.X.13.) at the end of this Section to give more clarity to the text.

Article 7.X.10.

The *ad hoc* Group did not accept the proposal of a Member Country to delete the reference to ‘biting/foraging’, but clarified that the normal behaviours that are being promoted are foraging behaviours that include biting enrichment materials.

The *ad hoc* Group did not agree with the proposal of a Member Country to include the term ‘behavioural need’ as the *ad hoc* Group agreed to use the term ‘normal behaviour’. The *ad hoc* Group did include some of the proposed examples of stereotypies supported by scientific references. Moreover, of the references provided (Brouns *et al.*, 1994; Bergeron and Gonyou, 1997 [referred to in Bergeron *et al.*, 2006]; Ramonet *et al.*, 1999) only Bergeron and Gonyou (2006) show that provision of straw reduces oral stereotypies. The *ad hoc* Group also added a second reference that shows that straw reduces oral stereotypies (Spoolder *et al.*, 1995).

The *ad hoc* Group agreed to delete the words “multiple forms of” in relation to the different kinds of enrichment to avoid confusion with the descriptions given in the bullet points of this section.

Regarding the proposal of a Member Country to include a sentence on “other abnormal behaviours”, the *ad hoc* Group did not accept this proposal as it did not add new information and could exclude the possibility of using positive behaviours as a measurable.

Article 7.X.11.

The *ad hoc* Group did not agree with the comment of a Member Country to include text to cover some aspects related to normal behaviour and space allowance. The *ad hoc* Group considered that this is already partially covered in Article 7.X.13. on space allowance.

The *ad hoc* Group did not agree with the proposal of a Member Country and an Organisation to include “additional space” in the point in relation to oral stereotypies, as the scientific references used to support this modification were related to the use of crates versus loose housing, not to the provision of additional space.

Under the request of a Member Country, the *ad hoc* Group replaced the word “can” with “may” as sometimes, even if environmental enrichment or other treatments are provided, oral stereotypies will continue.

The *ad hoc* Group agreed with a Member Country proposal to include language to emphasise that competition for other resources, and not only feed and water, is a factor when managing tail biting issues.

The *ad hoc* Group did not agree with the proposal of a Member Country to include vitamins as a deficiency that could trigger tail biting, as this it is not mentioned in the scientific reference provided or in other references that the *ad hoc* Group reviewed.

The *ad hoc* Group did not agree with the proposal of a Member Country to include stocking density. Research by Rizvi *et al.* (1998) (and quoted by Rodenburg and Koene, 2007) has shown that group size was positively associated with vulva biting in group-housed gestating sows. A sentence to this effect was added.

Article 7.X.12.

In response to a comment from a Member Country, the *ad hoc* Group agreed with the proposal to delete the word “humano” in the Spanish version of this article.

Regarding the comment of a Member Country to add a new sentence to highlight the importance of having a separate space to accommodate animals in emergency situations, the *ad hoc* Group did not agree as this aspect is already considered in a general way in the original paragraph.

In response to Member Countries comments to add two sentences in the paragraph dealing with the social characteristics of pigs, the *ad hoc* Group did not agree. In the case of the first sentence, the proposition is already considered in Article 7.X.13 on Space allowance. Concerning the proposal for the second sentence, the *ad hoc* Group did not agree to reinstate the last sentence of the paragraph, as although there is increasing anecdotal evidence, the statement is not well supported by literature. Recent research under controlled experimental conditions indicates risks to reproduction in mixing early after breeding.

“Conception rates (and farrowing rates) were lower for sows mixed early in gestation than for those mixed later in gestation or those housed in stalls for the entire gestation (conception rates of 87.1% and 89.2% for sows mixed at Days 3 and 14 after breeding vs 92.2% for sows mixed at Day 35 after breeding and 96.2% for sows continuously housed in stalls, Knox *et al.* 2014), and farrowing rates were lower for sows mixed early in gestation than for those mixed later in gestation (82.3% for sows mixed at Days 2 and 9 after artificial insemination vs. 86.7% for sows mixed at day 35 after artificial insemination, Li and Gonyou 2013).”

On the same topic, the *ad hoc* Group did not agree with the deletion suggested by a Member Country referring to the statement that pregnant sows and gilts should preferably be housed in groups.

The justification for not agreeing with this proposal can be summarised as follows:

“The evaluation of animal welfare can be grouped into three general categories: 1) biological functioning; 2) affective states; and 3) natural living. These categories form the basis for different approaches to animal welfare research (Fraser *et al.*, 1997).”

“When comparing stall gestation to group housing systems, both systems show similar levels of biological function, with generally equivalent measures of productivity and health (NFACC, 2012, Karlen *et al.*, 2007, Marchant and Broom, 1996). Group housing systems arguably provide better measures of affective state and natural living for sows based on reduced levels of stereotypies (Broom *et al.*, 1995) and increased ability to express normal behaviours (Von Borrell *et al.*, 1997). In comparison to stall housing systems, group housing systems can result in aggression and higher lesion scores (Karlen *et al.*, 2007), particularly if space allowance is insufficient, or if subordinate animals are not adequately protected from aggression or feeding competition (Verdon *et al.*, 2015). Therefore, when managing sows in groups it is important to provide adequate space allowance, and to ensure the proper distribution of resources and management of feed delivery to minimize the effects of social competition (EFSA, 2007).”

“The main concerns with stall housing are the general lack of social contact, inability to exercise and restricted choice of stimuli to interact with (Barnett *et al.*, 2001). Some negative consequences of stalls compared to group housing include reduced bone strength (Marchant and Broom, 1996), increased stereotypies (Broom *et al.*, 1995), higher resting heart rate (Marchant *et al.*, 1997), reduced body weight (Broom *et al.*, 1995) and prolonged farrowing time (Anil *et al.*, 2005).”

The *ad hoc* Group agreed that, when using gestation stalls, there are no measures which can be implemented to avoid the problem of behavioural restriction in stall gestation. Considering the limitations of stall housing, the *ad hoc* Group decided to maintain the statement regarding group housing for sows.

Broom, D.M., Mendl, M.T. and Zanella, A.J. 1995. A comparison of the welfare of sows in different housing conditions. *Animal Science* 61, 369-385.

EFSA. 2007. Scientific Report on animal health and welfare aspects of different housing and husbandry systems for adult breeding boars, pregnant, farrowing sows and unweaned piglets. European Food Safety Authority. *The EFSA Journal* 572:1-107.

<http://onlinelibrary.wiley.com/doi/10.2903/j.efsa.2007.572/epdf>

Fraser D. 1975. The effect of straw on the behaviour of sows in tether stalls. *Animal Production* 21: 59-68.

Karlen, G.A.M., Hemsworth, P.H., Gonyou, H.W., Fabrega, E., Strom, A.D. and Smits, R.J. 2007. The welfare of gestating sows in conventional stalls and large groups on deep litter. *Applied Animal Behaviour Science*, 105: 87-101.

Marchant, J.N. and Broom, D.M. 1996. Effects of dry sow housing conditions on muscle weight and bone strength. *Journal of Animal Science* 63: 105–113.

Marchant, J.N., Rudd, A.R., Broom, D.M. (1997) The effects of housing on heart rate of gestating sows during specific behaviours. *Applied Animal Behaviour Science*. 55, 67-78.

NFACC 2012. Code of Practice for the Care and Handling of Pigs: Review of Scientific Research on Priority Issues. Lacombe AB: National Farm Animal Care Council.

Verdon, M., Hansen, C.F., Rault, J-L., Jongman, E., Hansen, L.U., Plush, K. and Hemsworth, P.H. (2015), 'Effects of group-housing on sow welfare: A review'. *J. Anim. Sci.*, 93, 1999–2017.

Von Borrell, E., Broom, D.M., Scermely, D., Dijkhuizen, A.A., Hylkema, S., Edwards, S.A., Jensen, P., Madec, F. and Stamataris, C. 1997. The welfare of intensively kept pigs. A report of the Scientific Veterinary Committee. Available online at: http://ec.europa.eu/food/fs/sc/oldcomm4/out17_en.pdf.

Regarding the proposal of a Member Country to add a sentence at the end of the last paragraph of this section, the *ad hoc* group agreed to include a reference to the management of boars.

The *ad hoc* Group did not agree to add a statement on how to manage the housing of aggressive pigs, as it is already considered in the third paragraph of this section.

The *ad hoc* Group did not agree with the suggestion of a Member Country to add a new sentence on the different factors to consider in the management of pregnant sows and gilts kept in groups, since it is considered in Article 7.X.21 on Mixing.

Article 7.X.13.

1. Group housing

Regarding the second recommendation of Member Countries to include a new sentence after the second paragraph of the section on Group housing. The *ad hoc* Group did not agree as this is already mentioned in Article 7.X.12. on housing.

The *ad hoc* Group did not agree with the suggestion of a Member Country to change the word “should” by “needs to”, as the Group considered the later to be more restrictive than the existing wording.

In response to the suggestion of a Member Country to adapt the stocking density to the availability of water and shelter in outdoor production systems, the *ad hoc* Group did not agree with the proposal as the critical aspect in this kind of system is the supply of feed. Nevertheless, to be consistent with the order of the Chapter, the *ad hoc* Group moved the relevant text to Article 7.X.9 on Provision of feed and water.

2. Individual pens

The *ad hoc* Group did not agree with the suggestion of a Member Country to include lameness as an animal-based criteria, as it is related to flooring conditions and also because this aspect is covered in Article 7.X.14.

3. Stalls and crates

Regarding Member Countries' proposals to limit the time spent in gestation stalls, the *ad hoc* Group did not agree and reiterated the justification provided previously (meeting report of August 2017), that the proposal is too prescriptive at a global level and due to on-going controversy as to how many days should be adopted. Also, the *ad hoc* Group stated that despite the references provided, there is still no strong evidence to support this change.

The *ad hoc* Group agreed partially with comments of a Member Country and an Organisation on the stall and crate section. The *ad hoc* Group added a new sentence to include an exemption when using feeding stalls in the fourth bullet point. On the other hand, the *ad hoc* Group decided not to include the proposal to add a new paragraph on pregnant sows in groups at the end of the section as this is included in Article 7.X.12. on housing.

The *ad hoc* Group acknowledged the support of a Member Country related to the concepts developed in this section.

Regarding the suggestion of a Member Country to add “injuring” in the fourth bullet point of the section recommending the conditions for stalls and farrowing crates, the *ad hoc* Group did not accept the proposal as it does not add new information or facilitate the comprehension of the section.

Article 7.X.14.

The *ad hoc* Group partially agreed with the comment of a Member Country to add a new sentence to consider the conditions and ways that are used to help pigs cope with heat stress, flooring, bedding and resting surfaces conditions.

Regarding the comments of some Member Countries and an Organisation in relation to the use of fully slatted floor. The *ad hoc* Group did not agree to modify the current text and reiterated its justification included in its report of August 2017, in which it stated that “the scientific references provided do not give sufficient evidence to differ between partially and fully slatted floors in terms of foot and leg injuries and the ability to provide enrichment”. In addition, the *ad hoc* Group could not find other references that could support a phasing out of fully slatted floors.

The *ad hoc* Group did not agree with the addition of new text proposed by a Member Country to recommend the characteristic of the slope of the floor as there is no research available to support the addition of such a text and the pigs could slip independently of the floor slope under certain conditions.

Regarding a Member Country proposal to reinstate the text indicating the characteristics of bedding or rubber mats provided to pigs, the *ad hoc* Group did not agree as they considered that the term “suitable” did not add value to the text. Furthermore, characteristics relating to bedding and rubber mats are included at the end of the paragraph, and in the second paragraph of this section.

Article 7.X.15.

The *ad hoc* Group accepted the suggestion of a Member Country that draughts have a detrimental effect on the behaviour, health status and performance of pigs. ‘Daily but unpredictable draughts reduced growth rate, and increased coughing, sneezing, diarrhoea, skin lesions and injurious behaviour, such as ear-biting and aggression, in weaned pigs’ (Scheepens *et al.*, 1991). The *ad hoc* Group highlighted the importance of correctly understanding the concept of “draught”. “Draught” should be understood as ‘a current of unpleasantly cold air blowing through a room that can have a detrimental effect in weaning pigs’, or ‘an air stream needed for growing pigs, under heat stress conditions, to lose some body heat’. This is also important when translating the concept in French or Spanish.

The *ad hoc* Group reviewed the scientific references that support the examples of physical appearance “excessive soiling and tear staining” and agreed to delete it as no scientific references were found to support keeping the examples in relation to air quality.

Article 7.X.16.

1. Heat stress

The *ad hoc* Group did not agree with the suggestion of a Member Country to add “when it occurs” in the sentence since it did not add clarity to the text and because it is implicit in the text that heat stress is only a problem when this occurs.

The *ad hoc* Group agreed with the suggestion of a Member Country to add “solar radiation” as an environmental factor that could contribute to heat stress in pigs. The *ad hoc* Group considered this relevant in the light of the fact that shade is recommended elsewhere in the chapter to protect against solar radiation.

The *ad hoc* Group agreed with the suggestion of a Member Country that heavier pigs can experience more heat stress, at the same temperature, than growing pigs, once they are exposed to a higher heat load. However, the *ad hoc* Group based their decision on a more recent bibliography reference than the one provided by the Member Country.

2. Cold stress

The *ad hoc* Group accepted the recommendation of a Member Country to exclude the reference to “long hair” as an example of response to cold stress. According to scientific references, long hair is a natural condition for pigs in outdoor systems and would not be a useful measure to check if cold stress is occurring.

Article 7.X.17.

The *ad hoc* Group agreed with a Member Country suggestion to add a characteristic as to the type of noise that should be avoided, and to include “increased aggression” as a negative reaction to sudden or prolonged loud noises, as it is supported by the scientific references provided.

Article 7.X.18.

The *ad hoc* Group reinstated the justification for not accepting the request of a Member Country to mention the limit of 40 lux as a light intensity recommended to avoid increased aggression. In its previous report of August 2017, the *ad hoc* Group, following a recommendation of another Member Country, had removed the reference to this limit. However, the *ad hoc* Group emphasized the requirements for a suitable photoperiod and provision of suitable lighting levels for caretakers to properly inspect pens and animals. The *ad hoc* Group further noted that this was justified because of a general shortage of studies looking at lighting levels, not because any contradictory results have been found regarding the 40 lux recommendation.

Article 7.X.19.

The suggestion by a Member Country to add a sentence stating that nesting material should be provided only when “the equipment used is not sufficient to provide appropriate farrowing accommodation” has not been accepted by the *ad hoc* Group as nesting material is used to promote nest-building behaviour regardless of accommodation and is not related to the equipment.

The *ad hoc* Group did not agree with a Member Country and an Organisation suggestion to insert a new paragraph specifying the period that producers should consider using the farrowing crate during farrowing and after farrowing. Nevertheless the *ad hoc* Group agreed that this is an important aspect to be considered for future revisions considering the results of current research when they become available.

A suggestion of a Member Country to add a new paragraph on requirements for farrowing accommodations that provide comfort, warmth and protection to piglets was partially accepted by the *ad hoc* Group. They rephrased the suggested sentence and added it after the first paragraph of this article.

Regarding a Member Country's suggestion to add a new paragraph on the adaptation time of sows to farrowing accommodation, the *ad hoc* Group did not agree to add this information because they considered that this subject is already covered in other articles of this chapter.

The suggestion by a Member Country to add “gilts” as an example, to which the mortality or culling rate as a criterion could be applied to, was accepted by the *ad hoc* Group, as they considered it would improve the clarity of the text.

Article 7.X.20.

Regarding some Member Countries proposals to add a recommendation to delaying weaning, the *ad hoc* Group did not agree with this proposal, as no scientific reference was provided and as they considered that it is already addressed in the current paragraph.

The *ad hoc* Group did not agree with the request from Member Countries to reword the sentence on delay in weaning and the suggestion to remove the word “delay”. The *ad hoc* Group considered that this suggestion does not improve the clarity of the sentence and they also stated that the present text is in line with the sentence above.

The *ad hoc* Group did not agree with the suggestion of a Member Country to delete “less use” and replace it with “reduce the need for”, when referring to the use of antimicrobial agents as in their opinion it has the same meaning and also did not improve the clarity of the sentence.

Regarding the comment of a Member Country in order to emphasise that particular attention should be given to monitoring of newly weaned pigs during the first two weeks after weaning; the *ad hoc* Group did not agree as they considered that this comment did not contribute to improving the clarity of the text.

Article 7.X.21.

The *ad hoc* Group accepted the suggestion of a Member Country to reformulate the last paragraph on the pig-mixing procedure to emphasise that after mixing, pigs should be observed and that interventions should be applied when needed to minimize stress and injury.

The *ad hoc* Group did not agree with a Member Country to include a new sentence about the appropriate period to mix pregnant sows, as it considered that is already addressed in Article 7.X.12. on Housing.

Article 7.X.22.

Considering the suggestion of some Member Countries and an Organisation to include a reference about genetic criteria on breeding selection to improve the welfare of pigs, the *ad hoc* Group considered that it is not appropriate to include “reduced litter size” as a genetic goal based on the current scientific information. Nevertheless, while it is recognized that excessive litter size generally results in smaller less viable piglets, there is clearly a balance to be sought between litter size and piglet viability.

“Reducing litter size could be taken to the opposite extreme and is too vague a statement for such an important production trait. Management measures should be implemented to identify small and weak piglets, reduce the risk of hypothermia, ensure early colostrum intake and cross foster in a timely manner to provide each piglet with a viable teat (Ferrari *et al.*, 2014; Decaluwe *et al.*, 2014)”.

“Reduced litter sizes may be more appropriate for specific genetic lines, e.g. such as those used for outdoor production, where less supervision is available to new born piglets.”

C.V. Ferrari, P. E. Sbardella, M. L. Bernardi, M. L. Coutinho, I. S. Vaz, I. Wentz, F.P. Bortolozzo, Effect of birth weight and colostrum intake on mortality and performance of piglets after cross-fostering in sows of different parities, Preventive Veterinary Medicine, Volume 114, Issues 3–4, 2014, Pages 259-266, [https://doi.org/10.1016/j.prevetmed.2014.02.013.\(http://www.sciencedirect.com/science/article/pii/S0167587714000981\)](https://doi.org/10.1016/j.prevetmed.2014.02.013.(http://www.sciencedirect.com/science/article/pii/S0167587714000981))

R. Decaluwé, D. Maes, B. Wuyts, A. Cools, S. Piepers, G.P.J. Janssens, Piglets' colostrum intake associates with daily weight gain and survival until weaning, Livestock Science, Volume 162, 2014, Pages 185-192, ISSN 1871-1413, [https://doi.org/10.1016/j.livsci.2014.01.024.\(http://www.sciencedirect.com/science/article/pii/S1871141314000584\)](https://doi.org/10.1016/j.livsci.2014.01.024.(http://www.sciencedirect.com/science/article/pii/S1871141314000584))

Regarding the suggestion of a Member Country to reword the sentence mentioning the social effects that could be achieved by the procedure of selective breeding, the *ad hoc* Group did not agree with the proposal. However, to improve the clarity of the text the *ad hoc* Group reworded the sentence and added a new scientific reference.

Article 7.X.23.

The *ad hoc* Group did not agree to include the suggestion of an Organisation to mention that pigs in outdoor systems should be protected from predators “using humane methods”, as no reference was provided to support this request, and it could not find a scientific reference where humane methods of predator control are mentioned.

Article 7.X.24.

a) Animal health management

Regarding a Member Country suggestion to add rodent control as a requirement to improve biosecurity and disease prevention in pig health management, the *ad hoc* Group accepted the suggestion which was supported by scientific references and considering that this had not been included in other parts of chapter.

The *ad hoc* Group accepted the request of a Member Country to include the point that in cases where the pigs may be suffering with severe pain that cannot be alleviated, that humane killing should be performed.

Article 7.X.25.

Regarding a Member Country suggestion to add “or any other problem that leads to loss of control”. Pig producers should have contingency plans in place; the *ad hoc* Group considered that this is already covered in the paragraph and did not propose changes to the text.

In relation to the suggestion from a Member Country that electricity installations and devices should be checked and tested regularly, the *ad hoc* Group considered that this is related to the maintenance of the installations rather than to contingency plans and therefore did not accept the suggestion to amend the text. However, the *ad hoc* Group accepted the second comment to move the sentence “Contingency plans should be documented and communicated to all responsible parties”.

Article 7.X.26.

The *ad hoc* Group agreed with some Member Countries on the importance to refer to the LEGS (Livestock Emergency Guidelines and Standards of the FAO) document, but they would like to seek the advice of the Code Commission to decide about the pertinence to include it.

Article 7.X.27.

The *ad hoc* Group did not agree with the recommendation of an Organisation, that the ‘reasonability’ of a person in charge to decide or to proceed to a kill of a pig should be considered, as the quality or capacity of being reasonable is difficult to evaluate and quite subjective. The *ad hoc* Group also considered that it would not improve the clarity of the sentence.

Regarding a Member Country suggestion to specify that the procedures for on-farm humane killing of pigs should be performed under the guidance of a veterinarian, the *ad hoc* Group considered that it was not necessary to emphasise this point, as it is already covered by in the text.

3. Programme for further work after this meeting

The *ad hoc* Group was informed about the next steps that the chapter should follow on its pathway for adoption next May. The report, including the amended draft chapter, will be discussed during the February 2018 meeting of the Code Commission, it is anticipated that the draft revised chapter will be annexed to the report for its adoption during the next General Session in May 2018. The OIE Headquarters will contact the Members of the *ad hoc* Group if some additional work will be required after the Code Commission meeting.

4. Other business

No other new issues were proposed for discussion.

.../Appendices

OIE AD HOC GROUP ON ANIMAL WELFARE AND PIG PRODUCTION SYSTEMS

Paris, 16–18 January 2018

List of participants

MEMBERS OF THE AD HOC GROUP

Dr Birte Broberg (Chair)
Senior Veterinary Officer
Animal Welfare and Veterinary Medicine
Ministry of Environment and Food
The Danish Veterinary and Food
Administration
I Stationsparken 31-33 I DK-2600
Glostrup I Tif.
DENMARK
Tel.: +45 72 27 69 00
bb@fvst.dk

Prof. Paul Hamilton Hemsworth
Faculty of Veterinary and Agricultural
Sciences
21 Bedford St, Level 2
The University of Melbourne
North Melbourne
Victoria 3051
AUSTRALIA
Mob: +61 418 360 284
Tel.: + 613 83 448 383
phh@unimelb.edu.au

Dr Jennifer A. Brown
Prairie Swine Centre
Box 21057
2105 – 8th Street East
Saskatoon, Saskatchewan
S7J 5N9
CANADA
jennifer.brown@usask.ca

Dr Cleandro Pazinato Dias
Consultant IICA and MAPA
Av. José Gabriel de Oliveira,
915 ap. 1102 Torre I
Aurora - Londrina
86047360, PR
BRAZIL
Tel.: +55 43 911 269 38
cleandropazinato@uol.com.br

Dr Antoni Dalmau Bueno
Investigador
Subprogramas: Bienestar animal
Monells
Finca Camps i Armet
SPAIN
Tel.: +34 902 789 449 + 1434
antoni.dalmau@irta.cat

OIE HEADQUARTERS

Dr Leopoldo Stuardo
Chargé de mission
Standards Department
l.stuardo@oie.int

Dr Patricia Pozzetti
Chargé de mission
Standards Department
p.pozzetti@oie.int

OIE AD HOC GROUP ON ANIMAL WELFARE AND PIG PRODUCTION SYSTEMS

Paris, 16–18 January 2018

Adopted agenda

1. Welcome and introduction
 2. Consideration of Member Country's comments on draft Chapter 7.X. 'Animals welfare and pig production systems' and amend text as appropriate
 3. Programme for further work after this meeting
 4. Draft a report of the *ad hoc* Group meeting
 5. Other business
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[Note: this Annex has been replaced by Annex 18 to the report of the meeting of the OIE Terrestrial Animal Health Standards Commission which was held on 12–23 February 2018.]

