



Organisation
Mondiale
de la Santé
Animale

World
Organisation
for Animal
Health

Organización
Mundial
de Sanidad
Animal

Original: English
April 2019

REPORT OF THE MEETING OF THE OIE *AD HOC* GROUP ON ANIMAL WELFARE AND LAYING HEN PRODUCTION SYSTEMS¹

Paris (France), 2–4 April 2019

The OIE *ad hoc* Group on Animal welfare and laying hen production systems (the *ad hoc* Group) met at OIE Headquarters from 2–4 April 2019.

The agenda and *ad hoc* Group participants are presented in [Annex I and II](#).

1. Welcome and introduction

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

Dr Stefan Gunnarsson, chair of the *ad hoc* Group, opened the meeting and thanked the members for their dedicated work.

2. February 2019 meeting of the Terrestrial Animal Health Standard Commission

Dr Stuardo updated the *ad hoc* Group on discussions held during the February 2019 meeting of the Terrestrial Animal Health Code Commission (Code Commission). Dr Stuardo explained that given the significant number of comments received the Code Commission had requested that the *ad hoc* Group be reconvened to review these comments and revise the draft chapter as necessary. The Code Commission had noted the opposing positions expressed and recommended that the *ad hoc* Group continue to focus on animal-based measurables based on scientific evidence when revising the draft chapter and ensure that the text is drafted in a manner that is consistent with other animal welfare production system chapters in the OIE *Terrestrial Animal Health Code (Terrestrial Code)*. The Code Commission also requested that the *ad hoc* Group also take into account social and economic considerations, as well as the possible impact on food security when developing the revised text.

3. Review of comments

Comments were received from Argentina, Canada, Chile, China (People's Republic), Colombia, Costa Rica, Ecuador, Guatemala, Honduras, India, Japan, Malaysia, Mexico, Mongolia, New Caledonia, Norway, Peru, Philippines, Thailand, United States of America (USA), the Member States of European Union (EU) and 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) and the International Egg Commission (IEC).

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 September 2019 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/>

The *ad hoc* Group considered all comments and made amendments to improve clarity and readability, where relevant. Where amendments were of an editorial nature, no explanatory text has been provided. In addition, the *ad hoc* Group did not consider comments where a rationale had not been provided, that were difficult to interpret, or were too specific in nature, for example when only a relevant to one region or housing system.

The *ad hoc* Group developed the revised draft Chapter 7.Z. which is attached as [Annex III](#).

General comments

The *ad hoc* Group acknowledged the significant number of comments received on the draft chapter, circulated in the September 2018 report of the Code Commission, in particular comments requesting that the chapter consider the social, economic and cultural diversity of OIE Member Countries. To address this point, the *ad hoc* Group introduced a preamble to the chapter, highlighting that the chapter allowed for the continuous development of country specific animal welfare recommendations and monitoring for compliance. The *ad hoc* Group acknowledged that the role of ethics in animal welfare cannot be summarised easily and in a manner that encompasses the belief systems of all Member Countries; and therefore focused, as much as possible, on the scientific basis for the recommendations presented in the chapter.

These recommendations have been drafted in a generic manner and have not been tailored to specific production systems. To help achieve the development of country-specific animal welfare recommendations the *ad hoc* Group amended the first sentence of the second paragraph of Article 7.Z.5 to clarify that good welfare outcomes for pullets and hens can be achieved in a range of housing systems.

The *ad hoc* Group did not agree with comments that the draft chapter placed undue emphasis on behavioural aspects of pullet and hen welfare. This perception may arise from the inclusion of ‘behavioural outcomes’ within animal-based assessments on how pullets and hens are faring within existing production systems, in addition to recommendations to accommodate specific behaviours identified as ‘behavioural needs’ that pullets and hens are highly motivated to perform. Thirteen behaviour outcomes are listed within Article 7.Z.3 *Criteria (or measurables) for the welfare of pullets and hens* relative to nine outcomes that primarily relate to pullet and hen health and performance. It is noteworthy that the majority of behaviour outcomes listed have relevance across all three conceptual frameworks of animal welfare, namely health and biological functioning, affective states and normal living. Furthermore, among the 24 recommendations listed in the draft chapter, only four specifically suggest the provision of resources that facilitate motivated behaviours (dustbathing [Article 7.Z.10], foraging [Article 7.Z.11], nesting [Article 7.Z.12], and perching [Article 7.Z.13]).

The *ad hoc* Group also replaced the word ‘litter’ with ‘substrate’, as it considered this to be a broader term that also includes other material useful to develop some highly motivated behaviour. The *ad hoc* Group made this modification throughout the draft chapter for consistency.

The *ad hoc* Group agreed to add the word ‘animal’ before ‘welfare’, for consistency throughout the draft chapter when appropriate.

Article 7.Z.1. Definitions

The *ad hoc* Group did not agree with the comment to include breeding flocks in the definition of laying hens. There are specific production and welfare aspects related to poultry breeding, including broiler and layer breeding, which are distinct from pullet rearing, broiler production and commercial egg production. It remains the view of the *ad hoc* Group that the welfare of poultry used in breeding should be addressed separately. Therefore, the *ad hoc* Group requested the advice of the Code Commission as to whether breeding flocks should be included in the draft chapter. The *ad hoc* Group did not agree with the comment to specify the type of production systems in the definitions since the recommendations in the draft chapter are based on the welfare of layer hens and pullets, and the recommendations are drafted in such a way as to have applicability in all production systems.

Article 7.Z.2. Scope

The *ad hoc* Group did not agree with a comment to delete ‘with or without mechanical environmental control’ under the description of Indoor Systems. The *ad hoc* Group recalled the response provided in its March 2018 meeting report indicating that there is a variation in the systems used in different parts of the world without environmental control. For clarity on the type of environmental control being referred to, the *ad hoc* Group proposed to retain the word ‘mechanical’ in the description of completely housed systems in the scope.

With reference to the comment to specify the use of cages in indoor systems, the *ad hoc* Group did not agree as there are indoor systems where cages are not used.

The *ad hoc* Group agreed with a comment to add a third category of systems where pullets and hens are confined in an outdoor area and without access to a poultry house, i.e. ‘Completely outdoor systems’. For consistency, the headings for the other two production systems were also amended to ‘Completely housed systems’ and ‘Partially housed systems’.

Article 7.Z.3. Criteria (or measurables) for the welfare of pullets and laying hens

The *ad hoc* Group, in response to comments, reviewed the list of criteria and modified the list to only include those that focus on animal welfare outcomes rather than causes of animal welfare problems, while retaining the existing text as much as possible. Given that some comments suggested the inclusion of resource-based and management-based outcome measurables, the *ad hoc* Group proposed modifications to the first paragraph to emphasise that the chapter refers preferentially to animal-based outcome measurables for the assessment of the welfare of the pullets and hens. Whereas resource-based and management-based criteria are often inputs (e.g. engineering standards), this modification clarified that resource and management-based outcome measurables are also valid for the assessment of welfare and may have important applications.

To improve readability, the *ad hoc* Group merged the first and second paragraphs of this introductory section. For brevity, only measurables which have direct application in commercial pullet and hen production have been listed in this chapter.

The *ad hoc* Group did not agree with comments requesting to specify that the criteria are only valid for a specific production system. The *ad hoc* Group reiterated that the manner in which the chapter has been drafted seeks to allow continuous local level development of country-appropriate welfare standards, irrespective of production system, and considered that this aspect was clarified with the new preamble.

The *ad hoc* Group did not agree with the proposal to use the words ‘strain or genotype of birds’ instead of ‘genetics’, as the latter is a broadly used technical term, which also covers the different ‘strains’ used.

In response to a comment and also to support the implementation of the recommendations regarding painful procedures, the *ad hoc* Group proposed to add a new criteria for ‘beak condition’.

In the third paragraph of the introductory section, the *ad hoc* Group agreed with a comment to replace the word ‘bone’ with ‘skeletal’, as the latter is a broader term and replaced the word ‘sampling’ with ‘monitoring’ as it is better aligned with the definition and context of the paragraph.

The *ad hoc* Group did not agree with comments proposing the addition of more criteria and noted that the list is meant to give key examples and not be exhaustive.

1. Beak condition

The *ad hoc* Group agreed to add a new criteria for beak condition as this provides useful information about the extent to which pullets and hens are able to engage in normal behaviour.

2. Behaviour

The *ad hoc* Group did not agree with a comment to replace '*physical and social environment*' with '*housing system, space and light level*' as it considered that the existing term encompassed the suggested change and is less restrictive.

In response to comments, the *ad hoc* Group replaced '*domestic fowl*' with '*Gallus gallus domesticus*' to avoid confusion.

With regard to a comment to add more examples to the list of animal welfare problems, the *ad hoc* Group did not agree and noted that the list is not meant to be exhaustive.

a) Dust bathing

The *ad hoc* Group agreed with comments to delete '*good welfare*' because it did not accurately reflect the wording used in the scientific references. The *ad hoc* Group agreed to replace term this with '*associated with positive affect*'.

In response to a comment, the *ad hoc* Group modified the wording of the first part of this point, as it agreed that while dust bathing is an intricate behaviour, it would be more appropriate to consider it a '*complex behaviour*' as it involves a number of different patterns and is influenced by external factors.

The *ad hoc* Group agreed with a comment that questioned the validity of dust bathing to remove parasites and replaced this with more appropriate text.

The *ad hoc* Group did not agree with a comment to include additional references as to the importance of managing the substrate in relation to pullet and hen health, as this is addressed in Article 7.Z.10. Dustbathing areas.

b) Fear behaviour

The *ad hoc* Group did not agree with a comment to include more details on the importance of reducing fear during the rearing period as it considered this to be sufficiently covered in the current text.

The *ad hoc* Group agreed with a comment to include text regarding the effect of the presence of humans on the assessment of fearfulness, and modified the text accordingly and included a scientific reference.

c) Feeding and drinking behaviour

No comments were received for this section.

d) Foraging activity

The *ad hoc* Group did not agree with a comment that foraging is not an indicator of good animal welfare. The *ad hoc* Group emphasised that the paragraph stresses that it is the 'relative change' in foraging activity, rather than the presence or absence of the activity *per se*, that is an indicator of animal welfare.

The *ad hoc* Group did not agree with a comment to further elaborate the role of foraging, as it considered this was already addressed in the second sentence of the paragraph.

The *ad hoc* Group agreed with a comment to clarify the type of movement which could be indicative of a problem with the substrate, and also modified the scientific references supporting the statement regarding the reduction of the incidence of injurious feather pecking when there is an increase of the foraging activity.

The *ad hoc* Group added new a sentence at the beginning of the description to indicate that foraging activity is considered a highly motivated behaviour, and it is relevant to develop recommendations to help pullet and hens to perform this behaviour.

The *ad hoc* Group did not agree with a comment to add a sentence on respecting ‘*the recommended linear length of feeders for any specific genetic line*’, given that this is a resource-based input criterion and did not belong to this part of the chapter which describes important animal-based outcome measurables. Also, the focus is on outputs (e.g. feeding without undue competition, body weight) rather than on quantitative inputs.

e) Injurious feather pecking and cannibalism

The *ad hoc* Group did not agree with the suggestion to add the word ‘*abnormal*’ at the beginning of this point, explaining that because there is no specific reason as to why this behaviour is triggered, it would be difficult to ascertain ‘*abnormal*’ versus ‘*normal*’. In any case, by definition, this is an unacceptable behaviour regardless of the production system used.

The *ad hoc* Group considered further comments and added an indication of the difficulty in controlling this behaviour due to the multicausality of its origins and included a scientific reference from Nicol, 2018 to support this addition.

f) Locomotory and comfort behaviours

The *ad hoc* Group did not agree with the proposal to add ‘*flying*’ because it is not significant in the context of locomotory and comfort behaviour. The *ad hoc* Group also did not agree to add stress and frustration as a consequence of not being able to perform these behaviours, but rather added the word ‘*welfare*’ to cover the broader consequences.

The *ad hoc* Group reworded the text, and new scientific references were added, i.e. Bracke and Hopster, 2006 and Hartcher and Jones, 2017, to highlight the importance of recognising the negative consequences of not being able to perform locomotory and comfort behaviours.

g) Nesting

The *ad hoc* Group did not agree with a comment to add the word ‘*excessive*’ to uneven nest box use, as the key aspect to consider is the irregular use of nest areas and not the intensity of this behaviour.

Regarding the proposal to include the consequences of not being able to perform nesting behaviours, the *ad hoc* Group agreed to add two new examples to illustrate why this behaviour is important for the welfare of the pullets and hens. The relevant scientific references to support this modification were also included.

h) Perching

The *ad hoc* Group did not include a proposal to include a sentence on the importance of providing perches to pullets at an early age but agreed to include this Article 7.Z.13 on perches.

The *ad hoc* Group did not agree to include additional examples of why it is important to provide perches as it was already stated that perching is a highly motivated behaviour.

i) Resting and sleeping

The *ad hoc* Group did not agree with a comment to include a text regarding adequate light and dark periods to allow rest, as this recommendation is already included in Article 7.Z.17 on lighting.

j) Social behaviour

The *ad hoc* Group agreed with a comment to improve the readability of this point by deleting the term ‘*species*’ and to also emphasise that pullets and hens are highly social.

The *ad hoc* Group did not agree with a comment to add a new sentence regarding the effect on the individuals that are victimised by aggressive behaviour, as it considered this to be an unnecessary level of detail. The *ad hoc* Group also noted that there are no scientific references that confirm that this happens frequently, and that aggression was already included in the last sentence of this point.

The *ad hoc* Group did not agree to include the social behaviour of males, as males are not included in the scope of this chapter.

k) Spatial distribution

The *ad hoc* Group agreed to modify some of the terms used for consistency with terminology used in the rest of the chapter.

The *ad hoc* Group partially agreed with a comment to add an indication that '*fear behaviour*' could influence the spatial distribution, but did not agree to include '*disturbances*', as this is not an indicator of uneven spatial distribution.

l) Thermoregulatory behaviour

The *ad hoc* Group did not agree with a comment to include a new sentence regarding the effect of thermal stress in newly hatched poultry, as this is already included in Article 7.Z.15 *Thermal environment*, where the recommendation is to maintain the thermal conditions within a range that is appropriate for their stage of life.

The *ad hoc* Group did not agree with a comment to include text regarding changes in feed and water consumption as this is already included in point 11: *Water and feed consumption* of this article.

m) Vocalisation

The *ad hoc* Group did not agree with a comment to add a sentence to indicate results of a change in the vocalisation patterns, as the objective of this part of the text is to focus on the causes and not the results. However, the *ad hoc* Group agreed to include '*and their causes*' to better clarify this aspect.

3. Body condition

No comments were received for this section.

4. Eye conditions

No comments were received for this section.

5. Foot problems

In response to a comment to include '*cages in bad conditions*' a cause of foot problems, the *ad hoc* Group did not agree, as it was not the intention of the chapter to be linking specific production systems to specific outcomes. Nevertheless, it included a new sentence at the end of the first paragraph referring to inadequate system maintenance.

The *ad hoc* Group agreed to include '*contact dermatitis*', as a foot problem associated with inappropriate flooring, poorly designed perches, poorly maintained substrate and inadequate system maintenance. The *ad hoc* Group also included a new scientific reference to support their amendments.

Following comments, and to improve the clarity and avoid repetition, the *ad hoc* Group deleted the second paragraph and the first sentence of the third paragraph of this point.

6. Incidence of diseases, infections, metabolic disorders and infestations

The *ad hoc* Group did not agree with the proposal to add a new paragraph on the animal health impacts caused by an inadequate management of the substrate and nest boxes, as it did not consider this to be a criterion or measurables.

7. Injury rate and severity

In response to a query on the inclusion of ‘*nutrition*’, the *ad hoc* Group clarified that nutritional deficiencies, such as those caused by a deficiency in calcium intake, could provoke skeletal problems. Corresponding amendments were made to this sentence to clarify this point.

The *ad hoc* Group did not agree with a comment to include ‘*pecking*’ as a consequence of the actions of other birds, as it consider that pecking is the process, and not the outcome *per se*. Regarding another comment, the *ad hoc* Group agreed to include the genetic aspects related to management to reduce the incidence of injuries, but used the term ‘*genetics used*’ for consistency with previous modifications.

8. Mortality, culling and morbidity rates

The *ad hoc* Group agreed with the suggestion to add a new sentence at the end of this point to further emphasise the need to understand the reasons behind changes in morbidity and mortality rates.

9. Performance

The *ad hoc* Group agreed with comments on the use of the term ‘*pullets and hens*’ for consistency, and also accepted other editorial proposals to bring clarity to the text.

The *ad hoc* Group did not agree with a comment to add the ‘*mass of feed consumed per egg mass produced*’ to complement the indicator listed in sub-Article (c), as it considered that this is already implied in the current text.

The *ad hoc* Group did not agree with the comment to delete the use of Haugh units because it is not an indicator of animal welfare. The *ad hoc* Group noted that while Haugh units may also be affected by egg handling and storage conditions, it does not negate its validity as an indicator of egg quality from other causes such as welfare problems. Furthermore, the text states that an unforeseen reduction in these rates ‘*may*’ be reflective of welfare problems and not exclusively so.

10. Plumage condition

The *ad hoc* Group did not agree with a comment to delete the reference to the use of scoring systems, as this is consistent with other animal welfare chapters already adopted such as Chapter 7.13 *Animal welfare and pig production systems*.

The *ad hoc* Group did not agree with the comment to add ‘*overcrowding*’ as a cause of feather loss and damage, but rather proposed a modification to improve the clarity of the text and to highlight the importance of assessing the coverage and cleanliness of the plumage as a tool to detect animal welfare problems.

11. Water and feed condition

The *ad hoc* Group agreed with the comment that both water and feed quality and supply are separately of potential concern and amended the text accordingly.

Article 7.Z.4. Recommendations

In response to editorial comments and for consistency with terminology used in other animal welfare chapters in the *Terrestrial Code*, the *ad hoc* Group modified the first and third paragraphs. It also agreed with a comment to include ‘*genetics used*’ as a management factor to be considered.

The *ad hoc* Group did not agree to add ‘*the care of various agro-climatic conditions*’ as a provision to consider for the good welfare of pullet and hens, as the chapter read as a whole addresses all climatic conditions in which pullets and hens are kept. However, the *ad hoc* Group agreed to include a sentence to indicate that all pullet and hens production systems, independent of climatic conditions, are addressed by this chapter.

The *ad hoc* Group did not agree with comments to specify the design and management aspects for each commercial production system, as this consideration was included in the preamble of Article 7.Z.3 *Criteria (or measurables) for the welfare of pullets and hens*. Furthermore, the last sentence of the third paragraph states that the suitability of the criteria or measurables will be determined by the system in which the pullets and hens are housed.

The *ad hoc* Group agreed to add text referring to outcomes in terms of animal welfare and health in a range of housing systems, but placed this at the beginning of the second paragraph of Article 7.Z.5 *Location, design, construction and equipment of establishments*.

The *ad hoc* Group proposed to add a sentence indicating that the outcome-based measurables after each recommendation are listed in alphabetical order and do not indicate any specific ranking or relative importance.

Article 7.Z.5. Location, design, construction and equipment of establishments

The *ad hoc* Group did not agree with a comment to modify the title of this article to include ‘*maintenance*’ it considered that these aspects are considered in Article 7.Z.26. *Contingency plans*, where it recommends considering the maintenance provisions for the equipment, including backup systems.

The *ad hoc* Group agreed with a proposal to add a sentence in the second paragraph to indicate that other considerations such as health, environment, and animal management capability are also important in designing suitable housing systems.

The *ad hoc* Group did not agree with a comment proposing to delete the point on the consideration for pullets and hens to perform highly motivated behaviours when designing housing systems, noting that the importance of performing these behavioural patterns are well described and supported in Article 7.Z.3 *Criteria (or measurables) for the welfare of pullets and hens*.

The *ad hoc* Group did not agree with a comment to add text regarding the need for more than one source of water supply, as it was considered to be too detailed. Additionally, there are provisions on alternative access and supply of water in Article 7.Z.26. *Contingency plans*.

The *ad hoc* Group proposed to delete the examples of highly motivated behaviours in this article in order not to be restricted to only using some of these behaviours.

The *ad hoc* Group agreed to the suggestion to add a new sentence on encouraging the use of durable materials in facilities and equipment to facilitate cleaning and disinfection, and to include text on the importance of implementing a record keeping system for the equipment and contingency plans.

The *ad hoc* Group did not agree to include a sentence to address provisions when the pullet and hens depend on mechanical systems, for example ventilation, as such considerations are included in Article 7.Z.26. *Contingency plans*.

Article 7.Z.6. Matching the birds and the housing and production system

The *ad hoc* Group did not agree with a comment to delete the first sentence and for the second sentence to be amended as the *ad hoc* Group did not consider that the proposed amendment improved readability of the paragraph as was suggested.

The *ad hoc* Group did not agree with a comment to add a sentence regarding the possibility to match the pullet and hens as much as possible with the layer housing systems, as it was considered too restrictive and the text already addresses the relevance of pre-adaptation.

The *ad hoc* Group proposed to add the words '*infections and infestations*' in the list of outcome-based measurables to be consistent with the terms used in Article 7.Z.3 *Criteria (or measurables) for the welfare of pullets and hens*.

Article 7.Z.7. Space allowance

The *ad hoc* Group proposed to modify the first paragraph to improve clarity and consistency, and to address consideration of important aspects such the access to resources and normal postures when determining the space allowance in a housing system. These modifications also addressed other comments, those proposing considerations that pullets and hens are able to adopt normal posture in a housing system.

In response to comments, the *ad hoc* Group did not agree to include consideration of the different commercial systems when determining space allowance, as it already agreed to not differentiate between production systems as defined in Article 7.Z.1. *Definitions*.

The *ad hoc* Group did not agree to include a specific metric to determine space allowance as it considered this to be too restrictive.

In response to a comment to add '*technology*' to the list of factors, the *ad hoc* Group did not agree, but included a new factor in the list ('*equipment selection*') to cover this aspect.

The *ad hoc* Group agreed with the proposal to add a text regarding water and feed availability as it considered these to be important elements in managing the space allowance.

The *ad hoc* Group reordered the factors to be considered when determining the space allowance into alphabetical order.

Article 7.Z.8. Nutrition

The *ad hoc* Group, in response to comments, modified the structure of the first paragraph and merged it with the second paragraph along with some editorial changes to improve readability.

The *ad hoc* Group did not agree with a comment to include the provision of minerals during the rearing period as it considered this to be too detailed.

In response to a comment on the effect of diet formulation and form on behavioural patterns, the *ad hoc* Group considered that this was already addressed in the second sentence of the first paragraph, which refers to the form and quality of feed.

Article 7.Z.9. Flooring

The *ad hoc* Group agreed with comments to use the language used in other relevant animal welfare chapters in the *Terrestrial Code* in order to ensure consistency. In response to comments, the *ad hoc* Group made modifications to the first paragraph to address all of the production systems included in the scope of the chapter. The modifications also took into account a comment related to the behaviours that could be affected by the flooring design.

Regarding a comment concerning considerations to manure contamination of other pullet and hens, the *ad hoc* Group agreed to include the proposed text at the end of the first paragraph.

The *ad hoc* Group agreed with a comment that the provision of substrate will not be possible in all housing systems and modified the text of the first sentence of the second paragraph to state '*When substrate is provided*'.

The *ad hoc* Group made amendments to the list of outcome-based measurables to ensure consistency with the language used in Article 7.Z.3 *Criteria (or measurables) for the welfare of pullets and hens*.

Article 7.Z.10. Dust bathing areas

Regarding a comment on the possibility of implementing a transition period for the implementation of this chapter, the *ad hoc* Group discussed that they did not have the scope to determine this and referred this comment to the OIE and Code Commission.

The *ad hoc* Group did not agree with a comment to distinguish the specific production system in which dust bathing areas could be used, as *ad hoc* Group agreed that the recommendation should be applicable to all production systems considered in the scope of the chapter. In response to the suggestion to modify the text to be more inclusive, the *ad hoc* Group agreed to emphasise that access to dust bathing areas is desirable and replaced the words '*should be*' with '*When provided*'.

The *ad hoc* Group agreed with a comment to add '*incidence of diseases, infections and infestations*' to the list of outcome-based measurables to be considered under this recommendation, as the provided substrate may cause respiratory diseases and infestations (e.g. coccidiosis and red mites).

Article 7.Z.11. Foraging areas

The *ad hoc* Group agreed with comments to amend the text to ensure consistency and to include all production systems covered in the scope of this chapter. Consequently, the *ad hoc* Group amended the text to include the importance of having access to foraging areas and to consider all production systems by adding the caveat '*When provided*'. The *ad hoc* Group emphasised that the substrate areas in systems with outdoor areas should also be inspected.

The *ad hoc* Group agreed with comments, to include '*incidence of diseases, infections and infestations*' in the list of outcome-based measurables and noted that this also ensured consistency with the previous article.

Article 7.Z.12. Nesting areas

Regarding a comment to specify the type of production system, the *ad hoc* Group did not agree to specify the system and noted that the chapter should be applicable to all the systems described in the scope.

In response to the suggestion to modify the text to be more inclusive, the *ad hoc* Group agreed to emphasise that access to nesting areas is highly desirable and replaced the words '*should be*' with '*When provided*'. Also, the *ad hoc* Group did not agree with the proposal to include text regarding the possibility of parasite and microorganisms build-up in nesting areas it considered this to be sufficiently addressed in the list of outcomes.

The *ad hoc* Group agreed with comments to include '*incidence of diseases, infections and infestations*' in the list of outcome-based measurables.

Article 7.Z.13. Perches

Regarding a comment to specify the type of production system, the *ad hoc* Group did not agree to specify any systems and the chapter should be applicable to all the systems described in the scope.

For consistency with the amendments made in previous articles and to address comments on making the text more inclusive to all production systems, the *ad hoc* Group included a text regarding the importance and the need for having access to perches and replaced the words '*should be*' with '*when provided*'.

The *ad hoc* Group agreed with the suggestion to include text regarding the age when perches should be available, when provided.

In response to a comment to add examples of specific injuries in the outcome-based measurables, the *ad hoc* Group considered that this was unnecessary.

The *ad hoc* Group did not agree with a comment to replace '*perching*' with '*perching space*' in the list of outcome-based measurables, as this would correspond to an input parameter rather than to an outcome. However, the *ad hoc* Group added text '*prevent undue competition*' in relation to the space availability of perches.

The *ad hoc* Group did not agree to include examples for injury rate, as these are already mentioned in point 7 of Article 7.Z.3.

Article 7.Z.14. Outdoor areas

The *ad hoc* Group did not agree with the suggestion to add text referring to '*space allowance*' in the first paragraph as this is considered in Article 7.Z.7. *Space allowance*.

The *ad hoc* Group did not agree with comments to specify that there should be enough appropriate design openings for '*outdoor*' systems, as it was considered unnecessary given that this article refers to outdoor systems of any kind. The *ad hoc* Group agreed with the proposed text to improve readability of the third paragraph. In the same paragraph, the *ad hoc* Group did not accept the proposal to add a new sentence regarding the potential risk for water and feed due the interaction with wild animals, as it is already included in Article 7.Z.8. *Nutrition*.

The *ad hoc* Group agreed to add text regarding the need to protect pullets and hens from adverse climatic conditions.

The *ad hoc* Group did not agree with proposal to add the '*percentage of pullets and hens that use outdoor areas*', as it considered this was addressed in Article 7.Z.3. in the spatial distribution criteria. Also, the *ad hoc* Group did not agree to include '*predation rate*' to the list, as it is considered this to be covered by the measurables of mortality rates, and of injury rates and severity.

Article 7.Z.15. Thermal environment

The *ad hoc* Group agreed with a comment to reinstate the sentence regarding the use of the guidelines provided by laying hens genetic companies to identify the thermal comfort zones in the first paragraph, as it considered that this inclusion is current and relevant for the commercial genetics used, and comparable information was lacking in the peer reviewed scientific literature. In the same paragraph, the *ad hoc* Group added '*genetics used*' as a consideration for the thermal conditions in which pullets and hens should be maintained.

The *ad hoc* Group did not agree to include examples for thermoregulatory behaviour, as these are already mentioned in point 1 of Article 7.Z.3. The *ad hoc* Group agreed to add "*temperature and humidity*" to the list of outcome-based measurables even though these are not directly outcome-based measurables but rather resource-based measurables as deviations from acceptable parameters are likely to lead to animal welfare problems.

Article 7.Z.16. Air quality

The *ad hoc* Group agreed with a comment to include '*space allowance*' as one of the factors that may affect air quality, as it agreed that air quality may be affected by the density of the pullets and hens.

The *ad hoc* Group did not agree with a comment to add text regarding the monitoring of specified gas concentrations, as it considered that monitoring aspects are included in the actions required to maintain good air quality. Nevertheless, the *ad hoc* Group added a sentence linking air quality and good animal welfare to emphasise the importance of this recommendation.

The *ad hoc* Group did not agree with the comment to add a sentence indicating that air quality should be in relation to unpleasant sensations in humans, as this was considered to be imprecise.

The *ad hoc* Group did not agree with the proposal to add a sentence in relation to the need for artificial ventilation systems and backup power as it considered this to be particular to specific housing systems, and pointed out that backup systems are covered in Article 7.Z.26.

The *ad hoc* Group agreed with the suggestion to include some examples of resource-based measurables, such as ammonia level, carbon dioxide level, temperature, humidity and dust levels. The *ad hoc* Group also added to the list other important outcome-based measurables for this recommendation such as infections, metabolic disorders and infestations, morbidity and mortality rate, and thermoregulatory behaviours.

Article 7.Z.17. Lighting

The *ad hoc* Group did not agree with comments suggesting the inclusion of the duration of light during the light period, as it was already noted that the period should be ‘adequate’, specific to the housing system, and the absence of scientific literature investigating light duration relative to animal welfare rather than to production.

The *ad hoc* Group agreed to add ‘sleep’ to the activities that pullets and hens should perform in order to reduce stress and to promote circadian rhythms in the second paragraph.

The *ad hoc* Group did not agree with a comment to add ‘indoor systems’ when referring to changes in lighting, at the beginning of the third paragraph, as it was considered too specific and difficult to manage, and is addressed by the term ‘step-wise’. To improve readability of this paragraph the *ad hoc* Group made amendments to include the gradualness concept in the lighting changes. The *ad hoc* Group also added two new scientific references to support these amendments.

The *ad hoc* Group did not agree to include ‘production percentage’ in the list of outcome-based measurables as this aspect is included in ‘performance’.

Article 7.Z.18. Noise

In response to comments, the *ad hoc* Group made amendments to the first paragraph for readability.

Article 7.Z.19. Prevention and control of injurious feather pecking and cannibalism

The *ad hoc* Group agreed with a comment to replace the word ‘influencing’ by ‘increasing’ in the third indent to be more specific. The *ad hoc* Group also replaced the scientific reference to support this statement.

In response to a comment regarding the stocking density as a management factor to reduce the occurrence of injurious feather pecking and cannibalism, the *ad hoc* Group modified the fourth indent, indicating that the management action corresponds to increasing the space allowance during the rearing phase. The *ad hoc* Group also included a new scientific reference to support this amendment.

The *ad hoc* Group did not agree with a comment to include a new indent regarding the impact of changes in the diet, as this was covered by the first indent regarding the adaptation to the diet and the form of feed in rearing and lay.

The *ad hoc* Group did not agree with a proposal to add a new indent on the provision of outdoor access from a young age, noting that the list is not exhaustive and that not all systems allow for outside access.

The *ad hoc* Group deleted the seventh indent in response to comments and to be consistent with the modification that were done in Article 7.Z.21.

The *ad hoc* Group did not agree with a comment to include preventing and minimising parasitic infestation as a management method as the literature cited did not support this statement.

The *ad hoc* Group did not agree with the proposal to include a sentence regarding the available method for therapeutic partial beak removal as this topic is addressed in Article 7.Z.21.

Article 7.Z.20. Moulting

The *ad hoc* Group did not agree with a comment to delete the last sentence of the first paragraph as it was of the view that this is an important recommendation which is well documented in the literature; new scientific references were added.

The *ad hoc* Group agreed to add a scientific reference from Anderson, 2015, which will be useful to assist the reader regarding lighting regimes required for an effective moulting.

The *ad hoc* Group did not agree with a comment to add a sentence regarding management practices that should not be routinely conducted, as it considered that the recommendations should focus on positive actions.

Article 7.Z.21. Painful interventions

The *ad hoc* Group proposed to modify the title of this article to '*Painful procedures*' to be consistent with changes made throughout this article.

In response to several comments on the first paragraph the *ad hoc* Group agreed that terms widely used in the industry, such as '*beak trimming*' and '*beak treatment*' could have different meanings depending on locality and therefore proposed amendments that described the action, i.e. '*partial beak removal*' so that there was no ambiguity as to what the term means.

The *ad hoc* Group did not agree with comments proposing to add text regarding the training and skills of the personnel in carrying out these procedures, as this was considered in Article 7.Z.27.

In response to comments to ensure consistency with other OIE animal welfare chapters agreed to include a new paragraph on alternatives in relation to painful procedures.

The *ad hoc* Group agreed with a proposal to include '*body condition*' and '*beak condition*' (new criterion defined in Article 7.Z.3.) in the list of outcome-based measurables.

Article 7.Z.22. Animal health management, preventive medicine and veterinary treatment

The *ad hoc* Group did not agree with a comment to include text on how animal handlers should be '*trained*', as the key point is having the knowledge. In addition, Article 7.Z.27. covers training.

The *ad hoc* Group proposed to include record keeping as a tool for an effective programme for disease prevention and treatment.

The *ad hoc* Group did not agree with a comment to include the '*multi age condition of the farms*' in the list of outcome-based measurables, as this is not an outcome but a specific practice applied in some circumstances.

Article 7.Z.23. Biosecurity

The *ad hoc* Group partially agreed with a comment to include a sentence to indicate that biosecurity plans should be ‘*reviewed regularly*’ as management changes could impact the risk of pathogen and pest transmission.

The *ad hoc* Group partially agreed with a comment to add partial restocking of ‘*flock area*’ to the fifth indent, in addition to ‘*the house*’, and deleted the words ‘*the house*’ so that the point would not be limited to housed flocks only but would consider all production systems addressed.

The *ad hoc* Group reordered the list of infection and infestation routes in alphabetical order.

Article 7.Z.24. Humane killing of individual birds or flocks

The *ad hoc* Group noted that Chapter 7.6. *Killing for disease control purposes* is currently under revision and requested the OIE Secretariat to ensure that the proposed text be considered during this revision to ensure alignment

The *ad hoc* Group agreed with a comment to modify this article and made amendments to the first paragraph for clarity. It also agreed to include a new sentence regarding the competences of the person taking the decision to kill an animal, the necessary equipment, and documented procedures to correctly perform the humane killing.

The *ad hoc* Group also agreed to add a list of reasons for conducting a humane killing or euthanasia. The proposed list is in alphabetical order and is not a ranking of the reasons.

The text “*Outcome-based measurables include: injury rate and severity.*” was added for consistency.

Article 7.Z.25. Depopulation of pullet and laying hen facilities

The *ad hoc* Group agreed to include the word ‘*flock*’ in the first sentence, to clarify that the article covers the flock and not just small groups or individual pullet and hens.

The *ad hoc* Group agreed with a comment proposing the inclusion of a sentence in the second paragraph to highlight the importance of minimising the feed withdrawal period and modified the text accordingly.

The *ad hoc* Group did not agree to add text regarding the reason for not transporting diseased or injured pullets and hens, as transport issues are addressed in Chapter 7.3 *Land transport*. Furthermore, there are references to these aspects in the scope, and the suggested additions were considered to be too detailed.

The *ad hoc* Group partially agreed with a comment to take into consideration some specific issues during transport and amended text referring to plumage condition, which could affect thermal stress and injury during transport. The *ad hoc* Group added scientific references to support this modification.

The *ad hoc* Group did not agree with comments to include a sentence on how pullets and hens should be handled, as this was already included in Article 7.Z.28.

Article 7.Z.26. Contingency plans

The *ad hoc* Group agreed with comments to delete the text regarding fire safety plans at the end of the first paragraph as this was a duplication of the second sentence.

Article 7.Z.27. Personnel competency

The *ad hoc* Group proposed to modify the first paragraph adding a sentence to specify the characteristics that animal handlers should have in order to maintain the welfare of the pullets and hens.

The *ad hoc* Group did not agree with a comment proposing to include a new sentence concerning the need to review the training needs as it considered that this aspect is well addressed by the reference to ‘appropriate’ training.

In response to a proposal to add ‘*euthanasia methods*’ to the knowledge that animal handlers should have, the *ad hoc* Group modified the second paragraph to address this comment and to align this article with the modifications made to Article 7.Z.24 *Humane killing of individual birds or flocks*.

The *ad hoc* Group agree with a comment to include ‘*body condition*’ in the list of outcome-based measurables.

Article 7.Z.28. Inspection and handling

The *ad hoc* Group did not agree to include text regarding the method of killing pullets and hens but instead included a reference to Article 7.Z.24.

In response to a comment to add a text regarding the importance of the correct disposal of dead pullet and hens to reduce the contact with potential pathogenic agents, the *ad hoc* Group added text referring to Chapter 4.12 *Disposal of dead animals*.

The *ad hoc* Group did not agree with the proposal to add a new sentence regarding record keeping and maintenance of the equipment as these are already addressed in Articles 7.Z.22. and 7.Z.26.

The *ad hoc* Group reordered the objectives of the inspections.

The *ad hoc* Group did not agree with a comment to add text regarding the handling of pullets and hens in a manner to avoid stress and injuries, as it considered that it was clear as written in the current text. However, the *ad hoc* Group replaced the word ‘*posture*’ by ‘*manner*’ to improve readability.

Article 7.Z.29. Protection from predators

The *ad hoc* Group did not agree to add ‘*predation*’ to the list of outcome-based measurables, as it was considered to be included in the mortality criteria.

3. Proposal to reorder articles

In response to previous comments received regarding the order of articles, the *ad hoc* Group proposed a new order for the articles that provides a more logical flow in the draft chapter for the Code Commission’s consideration.

The proposed new order of articles is presented as [Appendix IV](#).

4. Next steps

The *ad hoc* Group was informed that its report, including the amended draft chapter, will be considered by the Code Commission at its next meeting in September 2019.

.../Annexes

**OIE AD HOC GROUP ON ANIMAL WELFARE AND
LAYING HEN PRODUCTION SYSTEMS**

Paris 2–4 April 2019

List of participants

MEMBERS OF THE AD HOC GROUP

Dr Stefan Gunnarsson (Chair)
DVM, PhD, Associate Professor,
Diplomate ECAWBM
Senior lecturer
Dept. of Animal Environment and
Health
Swedish University of Agricultural
Sciences (SLU)
P.O. Box 234,
S-532 23 Skara
SWEDEN
E-mail: stefan.gunnarsson@slu.se

Mr Kevin Lovell
P.O. Box 889
North Riding 2162
Johannesburg
SOUTH AFRICA
E-mail: ariadne@iafrica.com

Prof Jean-Loup Rault
Head of the Institute for Animal
Welfare Science (ITT)
University of Veterinary Medicine
(Vetmeduni) Vienna
Veterinärplatz 1, A-1210 Vienna
AUSTRIA
Tel.: +43 1 25077 4900
E-mail: [jean-
loup.rault@vetmeduni.ac.at](mailto:jean-loup.rault@vetmeduni.ac.at)

Dr Roberto Becerra Olmedo
Veterinarian
Technical Director
Food Solutions Team EIRL
CHILE
E-mail: rbecerra@fsteam.cl

Dr. Suzanne T. Millman
Professor, Animal Welfare
Veterinary Diagnostic & Production
Animal Medicine/Biomedical Sciences
Lloyd Veterinary Medical Center
#2201, College of Veterinary
Medicine,
Iowa State University, 1809 South
Riverside Drive, Ames, IA, 50011
UNITED STATES
E-mail: smillman@iastate.edu

Prof. Inmaculada Estevez
Ikerbasque Research Professor
Department of Animal Production
Neiker-Tecnalia
Vitoria-Gasteiz, 01080
SPAIN
Tel.: + 34 945 121 336
E-mail: iestevez@neiker.net

Dr Tsuyoshi Shimmura
Associate Professor
Tokyo University of Agriculture and
Technology
3-8-1 Harumi-cho, Fuchu-shi
Tokyo 183-8538
JAPAN
Tel.: +81-564-55-7601
E-mail: shimmura@go.tuat.ac.jp

OIE HEADQUARTERS

Dr Francisco D'Alessio
Deputy Head
Standards Department
OIE
E-mail: f.dalessio@oie.int

Dr Charmaine Chng
Chargé de mission
Standards Department
OIE
E-mail: c.chng@oie.int

Dr Leopoldo Stuardo
Chargé de mission
Standards Department
OIE
E-mail: l.stuardo@oie.int

**OIE AD HOC GROUP ON ANIMAL WELFARE AND
LAYING HEN PRODUCTION SYSTEMS**

Paris 2–4 April 2019

Adopted agenda

- 1) Welcome and introduction
 - 2) February 2019 Terrestrial Animal Health Standard Commission meeting report
 - 3) Consideration of Member Country's comments
 - 4) Proposal to reorder articles
 - 5) Next steps
-

[Note: this Annex has been replaced by Annexes 11 and 12 to the report of the meeting of the OIE Terrestrial Animal Health Standards Commission which was held on 10–19 September 2019.]

Proposed reordering of articles

- 7.Z.1. Definitions
 - 7.Z.2. Scope
 - 7.Z.3. Criteria and measurables for the welfare of pullets and hens
 - 7.Z.4. Recommendations
 - 7.Z.5. Location, design, construction and equipment of establishments
 - 7.Z.6. Contingency plans (previously 7.Z.26.)
 - 7.Z.7. Protection from predators (previously 7.Z.29.)
 - 7.Z.8. Space allowance (previously 7.Z.7.)
 - 7.Z.9. Nesting areas (previously 7.Z.12.)
 - 7.Z.10. Perches (previously 7.Z.13.)
 - 7.Z.11. Flooring (previously 7.Z.9.)
 - 7.Z.12. Dust bathing areas (previously 7.Z.10)
 - 7.Z.13. Foraging areas (previously 7.Z.11.)
 - 7.Z.14. Outdoor areas
 - 7.Z.15. Matching the birds and the housing and production system (previously 7.Z.6.)
 - 7.Z.16. Personnel competency (previously 7.Z.27.)
 - 7.Z.17. Inspection and handling (previously 7.Z.28.)
 - 7.Z.18. Nutrition (previously 7.Z.8.)
 - 7.Z.19. Air quality (previously 7.Z.16.)
 - 7.Z.20. Thermal environment (previously 7.Z.15.)
 - 7.Z.21. Lighting (previously 7.Z.17)
 - 7.Z.22. Prevention and control of injurious feather pecking and cannibalism (7.Z.19.)
 - 7.Z.23. Moulting (previously 7.Z.20.)
 - 7.Z.24. Noise (previously 7.Z.18.)
 - 7.Z.25. Biosecurity (previously 7.Z.23.)
 - 7.Z.26. Animal health management, preventive medicine and veterinary treatment (previously 7.Z.22.)
 - 7.Z.27. Painful interventions (previously 7.Z.21.)
 - 7.Z.28. Humane killing of individual birds or flocks (previously 7.Z.24.)
 - 7.Z.29. Depopulation of pullet and laying hens facilities (previously 7.Z.25.)
-