Submission No 413

INQUIRY INTO USE OF BATTERY CAGES FOR HENS IN THE EGG PRODUCTION INDUSTRY

Organisation: Australasian Veterinary Poultry Association

Date Received: 24 July 2019

The Director
Select Committee on the use of battery cages for hens in the egg industry,
Parliament House,
Macquarie Street,
Sydney NSW 2000

AUSTRALASIAN VETERINARY POULTRY ASSOCIATION

24th July 2019

Dear Sir/Madame,

RE: Inquiry into the use of battery cages for hens in the egg production industry

The following submission has been prepared on behalf of the Australasian Veterinary Poultry Association (AVPA). AVPA welcomes the opportunity to provide input into the NSW senate inquiry on the use of conventional cages for laying hens.

AVPA has a wide membership of Australian and New Zealand poultry veterinarians, scientists and those with an interest in poultry health, welfare and science. AVPA has been actively involved and very supportive of the development of the Australian Animal Welfare Standards and Guidelines for Poultry. The Standards and Guidelines once finalised and endorsed by the states should ensure national consistency with respect to poultry welfare outcomes and provide clarity for the egg industry moving forward.

We would encourage the select committee to review the AVPA's comprehensive public consultation submission that was formulated as part of this process, as the contents of this submission largely related to the scientific underpinning for the various advantages and disadvantages of caged versus alternative housing systems and other issues relating to layer hen housing. The AVPA public consultation submission can be publically accessed online (http://www.animalwelfarestandards.net.au/files/2015/07/m39b_Australian-Veterinary-Poultry-Association.pdf) and is also attached for ease of reference.

The timeframe provided for input into this important senate inquiry is considered insufficient to be able to provide a very detailed response to the specific terms of reference. A request for an extension was sought by AVPA and rejected. Therefore, the input provided has been largely drawn from the work previously completed by AVPA members to inform the Standards and Guidelines development process. We would welcome the opportunity to provide further input and evidence should there be an opportunity as part of the inquiry.

This submission addresses the specific questions outlined in the published Terms of Reference for the inquiry.

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Background:
It is important that the term 'battery cage' is appropriately defined in order to inform the select committee and the inquiry. Conventional cages for laying hens have evolved over the last two decades with some types of cages no longer permitted to be used. The space allowances for hens housed in cages have also evolved over time. It is unclear whether the definition of a 'battery cage' encompasses all types of conventional cages for laying hens and whether it also applies regardless of the space allowance per hen. It is important that scientific literature and other material reviewed to inform the inquiry is evaluated based on the current legislated infrastructure and space allowances for caged systems.

1. **The question of whether the use of battery cages to contain or accommodate hens in the egg production industry is**

6.1 associated with poor animal welfare outcomes or is accompanied by poor animal welfare practices:

6.1.1 This tone and bias of this question implies that 'poor animal welfare outcomes' are an inevitable consequence of the use of 'battery cage' systems. It is recognised that hens housed in conventional cages are restricted in terms of their ability to perform the full range of innate behaviours, such as perching, nesting and dustbathing.

6.1.2 However, there are also many welfare advantages to use of conventional cages over other types of egg production systems. The answer to this question depends on whether it is accepted that the level and duration of behavioural restriction for laying hens housed in cages outweighs the importance of other key welfare indicators, or not. For example, the mortality is accepted to be higher when hens are housed in barn and free range systems compared to conventional cage systems (Elson & Croxall, 2006). This is a result of a higher disease challenge and often higher incidence of behavioural issues leading to cannibalism-related mortality in non-caged systems. Group size is likely to influence the level of feather-pecking experienced by the flock and group sizes in cages are smaller than typical commercial non-caged systems (Shimmura et al, 2010). Predation and injury are also more likely to occur in non-caged systems (Lay et al, 2011).

6.1.3 It should be considered that 'poor animal welfare practices' are not a direct result of the housing system. The basic requirements to protect the welfare of hens are well defined in existing legislation and regulations. It is well recognised that management plays a critical role with respect to animal welfare outcomes and in many cases can be more important that the housing system or infrastructure. Good management and stockmanship are considered critical to achieve optimal welfare outcomes, more so for hens housed in non-caged systems.

6.1.4 It is important that requirements for animal production are defined by means of consistent national legislation. Appropriate, comprehensive legislation underpinned by scientific evidence ensures the welfare of all animals is protected, regardless of the species and whether they are kept in domestic or commercial situations.

6.2 justified by any other consideration:

6.1.1 The ongoing use of conventional cages could be justified by various reasons including: superior and consistent mortality and productivity; improved health status; enhanced biosecurity; and reduced faecal contamination of eggs.

6.1.2 An Australian research study (Downing, 2012) also concluded that the 'type of production system had no significant effect on egg albumin corticosterone concentration or the total egg corticosterone production'.

6.1.3 There may be other economic advantages to the use of caged housing systems, including the need for less land, labour and resources compared to barn and free range systems and improved feed efficiency, which reduces the cost of feed and the amount of raw materials required for animal feed production (Elson & Croxall, 2006). The lower cost of production allows eggs produced from caged systems to be sold at a lower cost to Australian consumers. Producing low-cost eggs in accordance with Australia's stringent animal welfare legislation may be especially important to lower income earners.

6.1.4 The alternative to caged systems may not always be associated with superior welfare outcomes. There are some diseases in Australia that occur almost exclusively in non-caged (barn and free range systems). Spotty Liver Disease is one such disease that occurs commonly in non-caged systems. Indicators in barn and free range systems include a drop in egg production of up to 35% and increased mortality of up to 15% (Courtice et al, 2018). The only reliable and effective control measure is treatment with antibiotics (Courtice et al, 2018). There are trails currently underway to assess options for vaccination but there is currently no available vaccine.

6.1.5 There is no general consensus based on either science or opinion as to whether the continued use of conventional cages is justified by the reasons highlighted above, amongst others. This is also true for members of AVPA, who have well-informed yet divergent views as to whether hens should continue to be housed in cages. For some, the level and duration of behavioural restriction for hens housed in conventional cages cannot be justified and this renders this system non-viable into the future. For others, the known advantages of cage systems compared other alternative systems, principally improved mortality and superior disease control, justifies their continued use at the present time.

6.3 consistent with community standards and supported by the public:

6.1.1 It is difficult for the AVPA to comment on the views of the community.

6.1.2 The changes to the purchasing behaviour of Australian consumers over the last decade may demonstrate increased support for eggs produced by hens housed in non-caged or alternative systems. However, eggs produced by hens housed in conventional cages are also still purchased by a significant proportion of the population. Therefore, it is difficult to understand the full extent of the community's views with respect to this issue. There may be a range of other factors that lead consumers to purchase specific products, such as the price or perceived view of product quality. It is anticipated that consumer preference will continue to drive changes with respect to egg production systems and that the egg industry will continue to evolve to satisfy consumer and market demand.

6.1.3 It is reasonable to assume that the community would strongly support the development and implementation of nationally consistent, comprehensive, scientifically based, Australian Standards and Guidelines for all species of poultry to ensure their animal welfare is paramount regardless of the system in which they are housed.

2. What legislative measures should be taken to:

6.1 Prevent poor animal welfare outcomes for hens in the egg production industry of New South Wales:

2.1.1 Adopt the final version of the Australian Animal Welfare Standards and Guidelines for Poultry and incorporate all of the Standards into NSW state government animal welfare

legislation. The incorporation of the Standards into legislation will define and improve poultry welfare, hopefully in a nationally consistent manner.

2.1.2 The process for developing the Standards and Guidelines has been rigorous. Poultry welfare experts, animal welfare scientists as well as those identified to be stakeholders, including animal welfare groups, and the community have been thoroughly engaged throughout the lengthy development process. It is important that the NSW government continues to support this process and endorse the final version of this document, recognising the thoroughness of the process and the considerable expertise and input of those involved in its development.

6.2 Set appropriate minimum standards of accommodation for the accommodation and treatment of hens in the egg production industry:

6.1.1 As above – endorse and adopt the Australian Animal Welfare Standards and Guidelines for Poultry once they have been finalised, ensure the Standards are incorporated into NSW legislation and support any future revisions of this document to incorporate advancements in poultry welfare research.

3. The impact of egg producing commercial operations that use battery cages on:

3.1 The environment

6.1.1 The AVPA is not well positioned to comment on environmental impacts of caged housing systems compared to the other systems. However, it would be prudent for the inquiry to consider and evaluate the advantages and disadvantages all types of housing systems and not only the impact of conventional caged housing systems on the environment.

6.1.2 The environmental footprint of caged housing systems is less compared to non-caged systems (Xin et al, 2011).

6.1.3 Nutrient run-off is likely to be less in the case of caged housing systems but will be dependent on a range of factors, such as: waste management; flock management; stocking density; and the topography of the land in the case of free range.

6.1.4 A comparison of the different production systems with respect to odour emissions, nutrient deposition into soil, land use considerations and also the level of land or pasture degradation should be reviewed to answer this question.

3.2 The health of workers

3.2.1 Again, it would be prudent of the inquiry to consider the impact of all housing systems on the health of poultry farm workers, rather than focusing on the impact of caged systems, as one system cannot be evaluated without assessing the alternatives.

3.2.2 There are various factors that will influence the health of workers. Comparison between production systems is likely to be compounded by other factors.

3.2.3 Dust generation as well as endotoxin exposure may be linked to increased levels of respiratory disease amongst poultry workers. Whilst dust generated may be higher in non-caged systems, principally due to the use of litter or bedding material on the floor (Elson & Croxall, 2006), the level of endotoxin exposure may be higher in caged systems (Just et al, 2009). Air quality may also be influenced by ammonia levels, which are likely to be higher in non-caged systems (Elson & Croxall, 2006 and Green et al, 2009). Carbon dioxide levels may be influenced by other factors, such as the ventilation and the season.

3.2.4 The flock size and also the time that farm personnel spend with the chickens or in the production environment are likely to contribute to health outcomes for workers.

3.2.5 Manual egg collection of eggs laid on the floor or outside nest boxes may increase the risk of injury to workers, increase their exposure to dust and may also increase risk of zoonotic disease transmission through the egg collection process.

3.2.6 Biosecurity and zoonotic disease considerations may also be a factor contributing to the health of poultry farm workers. Avian Influenza, Salmonellosis and other zoonotic diseases may have an impact on the health of workers, when and if they occur. These diseases may occur across the different housing systems. However, there is growing concern that the opportunity for increased interaction with wild birds and waterfowl in the case of free range laying hens, may increase the risk of Avian Influenza. An Australian risk assessment concluded that free range laying hens had the highest probability of exposure to wild birds and waterfowl (Scott et al, 2018). Avian Influenza (AI), especially highly pathogenic (HPAI), has the potential to result in severe disease in poultry, as we have seen in Australia in the past and as recently as 2013 in Young, NSW. In most outbreaks of HPAI in Australia to date, direct and indirect contact between wild waterfowl and commercial poultry has been identified as an important introduction pathway (Singh et al, 2018). In 2014 and 2015, an outbreak in the United States resulted in the depopulation of over 50 million commercial birds. This disease has considerable zoonotic potential. Whilst free range poultry farming may be one such important risk factor, the size of the flock and likelihood of passage, or cycling of the virus, within the flock may also increase the risk of disease occurring.

4. Trends in relative consumer demand for egg and egg-containing products derived from commercial operations that use battery cages and commercial operations that do not

See comments above with respect to community expectations under 1.(III).

5. The protection of consumer interests, including the right of consumers to be fully informed of the sources of eggs in egg-containing products

The AVPA is not in a position to comment on protection of consumer interests, other than to say that consumers currently have a choice to purchase products that meet their expectations and are produced in accordance with Australian consumer law.

6. The economic and social effects on New South Wales of:

6.1 Banning, or not banning, the use of battery cages to contain or accommodate hens in the egg-production industry

6.1.1 The AVPA is not well positioned to comment on the economic and social effects on the NSW population of banning, or not banning the use of conventional cages for laying hens.

6.1.2 There will undoubtedly be economic and social consequences for lower income earners in NSW if caged eggs are no longer produced. The extent of this impact should be evaluated to inform the response to this question. It is well recognised that the cost of producing eggs from barn and free range systems is higher compared to caged systems and this cost difference must be passed onto consumers to ensure that the Australian egg industry remains commercially viable into the future.

6.1.3 The economic impact for egg producers of a ban on conventional cages has been evaluated as part of the Regulatory Impact Statement (RIS) that has informed the development of the Australian Animal Welfare Standards and Guidelines for Poultry. The RIS should be reviewed to inform this question.

6.2 Legislating, or not legislating, to prevent poor animal welfare outcomes to hens in the egg production industry of New South Wales and/or to set appropriate minimum standards of accommodation for the accommodation and treatment of hens in the egg production industry

6.1.1 It is accepted that the state of NSW has a responsibility to ensure that there is sufficient, robust legislation and regulations to protect the welfare of all animals, not just commercial poultry, as is the case currently under the Prevention of Cruelty to Animals Act 1979.

6.1.2 The current law could be strengthened by incorporation of the Standards from the Australian Animal Welfare Standards and Guidelines for Poultry into NSW legislation. The Standards and Guidelines have been developed based on a comprehensive review of the available science as well as input from poultry welfare experts and stakeholders. Therefore, it is expected that this document will serve to best inform the states with respect to appropriate minimum welfare standards to be incorporated into animal welfare legislation.

6.3 The advantages, disadvantages and issues of different egg farming production methods,

6.1.1 As part of the Australian Animal Welfare Standards and Guidelines development process, a thorough review of the advantages and disadvantages of the different egg production methods was completed. A summary is incorporated into the RIS that was made available for public consultation and should be reviewed to inform this question. AVPA provided substantial feedback in our public consultation submission where there were examples of oversimplification or limited justification to support the conclusions reached. We would encourage the select committee to review the list included in the RIS and the AVPA response.

6.1.2 It is important to note that other types of caged housing systems, such as furnished or colony cages were not reviewed as part of this summary. AVPA provided comment on these alternative caged systems as part of the public consultation submission.

6.1.3 The advantages and disadvantages of the different systems has been summarised by well-regarded animal welfare scientists as part of the European LayWel project (Blokhuis et al, 2007). A comparison table included in this report was adopted in the American Veterinary Medical Association in their reference article on this issue (https://www.avma.org/KB/Resources/Reference/AnimalWelfare/Pages/AVMA-issues-A-Comparison-of-Cage-and-Non-Cage-Systems-for-Housing-Laying-Hens.aspx).

6.1.4 A brief summary of the advantages and disadvantages of the different systems is provided below, principally with respect to animal health and welfare outcomes, as AVPA has particular expertise in these areas. The list provided below is by no means exhaustive, as there are many factors to consider when evaluating the different production systems.

Conventional cage systems:

Advantages

- Hens housed in cages are well recognised to have the lowest levels of disease and mortality, including less cannibalism-related mortality and reduced internal and external parasites (Lay et al, 2011). There is also less risk of mortality due to smothering due to the smaller group size (Lay et al, 2011).
- With a limited number of birds housed in each cage, the opportunities for bird-to-bird contact are minimised and spread of disease is generally slower. As mentioned above, the risk of Avian Influenza and other exotic

diseases may be lower due to reduced opportunity for direct contact with wild birds and waterfowl (Scott et al, 2018)

- Feed efficiency is improved for hens housed in cages compared to non-caged systems (Shimmura et al, 2010).
- The research would appear to support foot health as being improved in conventional and furnished cages when compared to non-caged systems.
- An advantage of caged systems is that they are highly automated and generally self-sufficient. A person may not require the same level of stockmanship or animal husbandry skills to successfully manage hens in cages.
- Hens housed in conventional cages may have the most reliable access to feed and water, improved thermal comfort based on being housed indoors and protection from predation and injury. These factors may also be dependent on management factors and facilities. Housing poultry indoors may also make them more susceptible to the impacts of power and generator failure but this is not unique to caged systems.

Disadvantages:

- Hens housed in conventional cages are restricted in terms of their ability to express natural behaviours, as they do not have access to perching, a scratch area or a nest box. This is considered to be a well recognised disadvantage of cage systems.
- Osteoporosis and cage layer fatigue may occur more commonly when hens are housed in cages (Lay et al, 2011). Fatty Liver Haemorrhagic Syndrome, a metabolic disorder, may also be more prominent in hens in cages and result in mortality and production losses (Shini and Bryden, 2009).
- Claw health may be worse in caged systems, if hens are not provided with scratch pads (Lay et al, 2011). Differences in foot and claw health between conventional and enriched cages should also be considered and may warrant further differentiation of caged systems based on their outcomes for animal welfare. Hyperkeratosis can occur on the toes and footpads of caged hens at a higher frequency than in non-caged systems (Lay et al, 2011). The load on the toe or footpad of hens on wire floors of the cage as well as the slope of the cage floor may contribute.
- It may be more difficult to remove mortalities in high-rise caged systems compared to non-caged systems.
- Furnished and colony cages should be considered separately with respect to their advantages and disadvantages.

Barn systems:

Advantages:

- Barn systems house hens indoors and provide nest boxes for laying. There may or may not be access to a litter or scratch area and opportunities for perching.
- Depending on the management and infrastructure, barn housing systems may also provide improved thermal comfort when compared to free range or outdoor systems, and also offer protection from predators.

Disadvantages:

- Feather pecking and mortality due to cannibalism is likely to be higher in barn systems compared to conventional cage systems (Sherwin et al, 2010).
- Keel bone fractures may be higher if perching is provided in non-caged systems.
- There may also be increased risk of disease due to opportunity for faecal-oral transmission of parasites and increased transmission by other routes of various infectious agents, including the causative agent of Fowl Cholera and Spotty Liver Disease (SLD). These diseases, when they occur, almost exclusively in non-caged housing systems, result in high mortality and productivity losses necessitating antibiotic treatment. In the case of SLD, there is no effective vaccine available at present to prevent this disease from occurring.
- It can be reasonably assumed that given the level of bacterial diseases is higher in non-caged systems, use of therapeutic antibiotics is also higher. Use of antibiotics to treat food producing animals is attracting increased scrutiny due to the risks associated with antimicrobial resistance, which may have implications for treatment of sick people that may acquire antibiotic resistant bacterial infections.
- As a result of increased occurrence of disease, more vaccinations are usually required to be administered to hens in order to prevent disease in non-caged systems compared to caged systems.

Free range systems:

Advantages:

- Free range housing systems allow hens access to the outdoors and provide an increased level of behavioural enrichment compared to the other systems. However, the level of behavioural enrichment is also likely to be dependent on the resources provided.
- Free range systems offer many of the other advantages of barn housing systems, including provision of nest boxes for laying. There may or may not be perches provided.

Disadvantages:

- Feather pecking and mortality due to cannibalism is likely to be higher in free range systems compared to conventional cage systems. Sherwin et al. (2010) determined vent pecking was most prevalent in free range flocks compared to other types of systems.
- Keel bone fractures may be higher if perching is provided in non-caged systems.
- There may be negative implications for animal welfare as a result of hens being able to eat grass and other material from the range area, diluting the nutrient value of their formulated feed. However, the implications for welfare may not be restricted to negative implications. For example, the ingestion grit or larger particles may aid gizzard development, as demonstrated in free range broiler research by Durali et al. (2014). This has also been demonstrated in layer chickens (Svihus, 2012). In the same

paper, it was hypothesized that ingestion of materials on the range could also improve retention time in the crop, and thus potentially improve efficacy of the digestion process.

- The disadvantages of free range systems include: poorer biosecurity; likely increased opportunities for contact with wild birds and other animals; increased risk of injury and predation; reduced thermal comfort due to variable environmental conditions; and increased risk of disease. Disease in general may spread faster in non-caged housing systems where all birds have increased opportunity for contact, co-mingling and increased contact with faeces.
- Fowl Cholera and Spotty Liver Disease can also occur in free range systems, resulting in high mortality and production losses. In the case of Spotty Liver Disease, there is no effective vaccine available at present to provide hens with immunity and reduce their risk of disease.
- It can be reasonably assumed that given the level of bacterial diseases is higher in non-caged systems, use of therapeutic antibiotics is also higher. Use of antibiotics to treat food producing animals is attracting increased scrutiny due to the risks associated with antimicrobial resistance, which may have implications for treatment of sick people that may acquire antibiotic resistant bacterial infections.
- More vaccinations are usually required to prevent disease and maintain welfare in non-caged systems compared to caged systems.

6.4 What measures should be taken to assist businesses that may be adversely affected by any changes to the law

AVPA is not able to comment on this particular aspect for the purposes of the inquiry.

6.5 What scientific literature says about the above matters

- It is well recognised that all commercial egg production systems have different advantages and disadvantages with respect to poultry welfare outcomes, occupational health and safety and environmental considerations and this is affirmed by the scientific literature.
- There have been a number of scientific reviews as well as primary research conducted in order to evaluate the welfare outcomes for hens across different housing systems. The research is in many cases conflicting and is not easily resolved.
- One specific area of contention relates to stress and measurements of the stress levels of hens housed in caged versus non-caged systems. Singh et al, 2009 determined that genetics has an influence on stress levels and that housing system did not necessarily have an influence, as no hens appeared to be unduly stressed. This was supported by an Australian research study (Downing, 2012) which concluded that the 'type of production system had no significant effect on egg albumin corticosterone concentration or the total egg corticosterone production'. Egg corticosterone concentration was selected as the preferred method of assessing stress level in this study due to it being a non-invasive method and therefore, unaffected by handling the hens. There was variation of egg corticosterone levels between hens and between individual farms in this study, which required further consideration. In a UK research study assessing welfare across 4 different housing systems (conventional cage, furnished cage, barn and free range) the barn hens had the highest levels of abnormal egg calcification and corticosterone as well as poor plumage, old fractures and

emaciation (Sherwin et al, 2010). The same study concluded all housing systems had positives and negatives but the lowest prevalence of problems occurred in hens housed in furnished cages. Hens in conventional cages sustained more fractures at depopulation, which is likely related to higher incidence of osteoporosis (Sherwin et al, 2010).

- Notably, Lay et al, 2011 concluded in their review that 'no single housing system is ideal from a hen welfare perspective' and 'although environmental complexity increases behavioural opportunities, it also introduces difficulties in terms of disease and pest control'. Systems with increased opportunities for behavioural expression, 'can create opportunities for hens to express behaviours that may be detrimental to their welfare'. Ongoing research is being undertaken to understand causes and mitigation strategies that may improve welfare in alternative systems.
- It is reasonable to assume that AVPA members have developed their own views informed by evaluating the available animal welfare science and through their own current industry experience. A consensus cannot be reached on this issue and AVPA members remain equally divided.

We are optimistic that the select committee will review all of the available science and information provided in detail in order to inform their judgement with respect to this very complex issue. In our view, the best outcome would be for the NSW government to support the development of the Australian Animal Welfare Standards and Guidelines for Poultry, to endorse the outcome and to ensure the Standards are adopted into NSW legislation in order to achieve nationally consistent poultry welfare legislation.

We would also be very willing to contribute further to the inquiry should there be an opportunity.

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Yours faithfully,

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