RSPCA
for all creatures great & small

26 February 2018

Poultry Welfare Standards Public Consultation
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Dear Sir, Madam

Proposed Australian Animal Welfare Standards and Guidelines for Poultry – Public Consultation

Thank you for the opportunity to comment on the proposed *Australian Animal Welfare Standards and Guidelines for Poultry*. The Proposed Standards will govern the way over 650 million animals are farmed and slaughtered in Australia every year. By this measure, they are the most important animal welfare standards in the country and community interest in their development is high.

The RSPCA has significant concerns with the way the Proposed Standards have been developed thus far. The lack of independent scientific review, the deficiencies in the scientific support papers produced by the Standards Writing Group, the restrictive context of the stakeholder deliberations, and the subsequent failure of the Proposed Standards to recommend meaningful changes to current industry practice raise serious questions over the integrity of the Standards development process.

The Proposed Standards do not reflect current scientific knowledge, nor are they consistent with Australian community expectations. We are aware that over 100,000 people have made submissions to this public consultation process. This is by far the largest community response to an animal welfare public consultation process in Australia's history.

We are also concerned that the Consultation Regulatory Impact Statement (the RIS) is severely lacking. It fails to sufficiently assess the animal welfare benefits and in some parts is grossly misleading in its presentation of the animal welfare impacts of the various options considered. Additionally, the underlying assumptions in the economic modelling are deficient in key respects and the consideration of costs goes beyond the scope of what a Regulatory Impact Statement is designed to assess. The RIS as currently drafted cannot be relied upon to recommend an animal welfare policy decision. Accordingly, RSPCA Australia is not able to put forward a preferred regulatory option from the RIS as currently drafted. Instead, we refer Animal Health Australia and the RIS consultant to our detailed comments on the RIS and the Proposed Standards outlined in the enclosed submission.

As the RIS notes, 'the successful pursuit of many industries involving animals is dependent on community confidence in the regulation of animal welfare' (page 11). The RSPCA is concerned that the Proposed Standards will damage community confidence in Australia's poultry industries and the Government's approach to regulating animal welfare should the Proposed Standards remain unchanged.

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We trust that Animal Health Australia and the RIS consultant will seriously consider this submission, along with the many others from the Australian community, with a view to amending the Proposed Standards and the Decision RIS to better reflect the current scientific evidence and the views of the Australian community.

Yours sincerely,

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RSPCA SUBMISSION

PROPOSED DRAFT AUSTRALIAN ANIMAL WELFARE STANDARDS AND GUIDELINES FOR POULTRY Version: Public Consultation Nov 2017

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SECTION 1 – COMMENTS ON THE CONSULTATION REGULATORY IMPACT STATEMENT

INTRODUCTION

The role of regulation impact assessment is to assess the costs of proposed regulation against the benefits sort to be achieved by the policy underpinning the regulation with a view to recommending the regulatory option/s that provide the greatest net benefit to the community (RIS, p. x).

The Consultation Regulatory Impact Statement (RIS) fails to do this. It systematically understates, and in some cases simply fails to consider, the animal welfare benefits of the proposed options and it overstates the estimated costs by taking into account costs that are not imposed by the regulation. In doing so, the RIS fails to perform its role with respect to assessing benefits and goes beyond its remit in its assessment of costs. In its current form, the RIS is not a suitable basis upon which recommended animal welfare policy decisions can be made.

In addition, the RSPCA is concerned by the heavy reliance on undisclosed data provided by industry representative organisations upon which major assumptions in the economic modelling are made. Information relating to current and projected industry practice is not included in the RIS. Instead, the basic figures are presented and simply referenced as "provided by AECL" or "provided by ACMF". Information relating to beak trimming practices (SA9.15) and the percentage breakdown of industry transition away from conventional cages to alternative systems (Option D), upon which over a $1 billion in costs are based, is not disclosed. This information should be disclosed in the RIS so that stakeholders, including government policy officers, and the public can make more informed assessments regarding its validity.

Finally, the RSPCA would like to highlight the absence of any consideration given to the extent to which the costs can be passed on along the supply chain, particularly to consumers. All costs in the RIS are simply attributed to producers when in reality many of the identified costs will be distributed throughout the supply chain and incorporated into the retail price of the product. When this is broken down on a per egg unit basis, the significance of the costs and their distribution can more readily understood by stakeholders, government, and the public.

As it is currently presented, the RIS does not provide a suitable basis for recommending an animal welfare policy decision and we are very concerned about the potential damage it has already done in misleading the public debate about the estimated costs of the proposed regulatory options and their welfare impacts. The RIS requires major revision to:

a) take a more sophisticated approach to assessing animal welfare benefits including consideration of the nature of the impacts taking into account duration, scope, variability, and the extent to which the impacts can or cannot be managed;
b) remove the assessment of costs associated with voluntary commercial decisions by industry such as decisions to transition from conventional cage systems to free-range systems;
c) disclose the data provided by industry representatives, particularly AECL and ACMF, upon which major assumptions in the RIS are based; and
d) take into account the extent to which the costs can be, and will be, distributed through the supply chain.

The comments below will first consider the RIS policy objective followed by a critique of the way the RIS has attempted to consider animal welfare benefits and impacts of the various options. The submission will then provide specific comments on the evaluation of each regulatory option and the final section includes comments on the distribution of costs.

DESIRED OPTIONS

Due to the failure of the RIS to adequately assess the animal welfare impacts of the various options and the fundamental flaws of the economic modelling, RSPCA Australia is not able to put forward a preferred regulatory option from the RIS as currently drafted.

Instead, we refer Animal Health Australia and the RIS consultant to our detailed comments on the animal welfare standards in Parts 2 and 3 of this submission. As discussed in these Parts, with detailed reference to scientific evidence, the RSPCA supports:

- a regulated phase out of the conventional cage system for layer hens;
- a reduction in stocking density for meat chickens to 34kg/m^2 for tunnel ventilation systems and 28kg/m^2 for natural ventilation systems;
- a reduction in stocking density for layer hens to 9 birds/m^2 of the usable area for tiered systems and 7 birds/m^2 of the usable area for floor-based systems;
- the provision of nests, perches and scratch pads for all chicken layers; and
- a prohibition on routine beak trimming with allowance for justified exceptional circumstances.

RIS POLICY OBJECTIVE

The stated policy objective of the RIS is "to minimise risks to poultry welfare; and to reduce both industry uncertainty and excess regulatory burden in a way that is practical for implementation and industry compliance" (RIS, p.vii). The main criterion for evaluating the proposed standards and different regulatory options is net benefit for the community which is to be determined after assessing the poultry welfare benefits against the net compliance costs to industry (RIS, vii). The RIS correctly identifies why the market is incapable of achieving this objective (RIS, pp.45-47).

The stated policy objective is largely consistent with the Productivity Commission's framing of farm animal welfare policy objectives (Productivity Commission, 2016, p.205):

> The challenge for policy makers is to determine the level of farm animal welfare that provides the highest net benefits to the community as a whole. That is, the level that balances the value of farm animal welfare against the cost of achieving a certain level of welfare.

However, the Productivity Commission does not frame the policy objective as one of "minimising risks" to animal welfare. Most of the animal welfare impacts sought to be addressed by animal welfare standard-setting processes are not "risks" but inevitable consequences of production systems and husbandry practices. For instance, a hen in a conventional cage is not at 'risk' of experiencing behavioural deprivation, rather, it is an inherent consequence of the production system. Accordingly, the policy objective should be reframed as one of "minimising *impacts* on poultry welfare".

Application of the risk assessment model presented at page 30 raises some difficulties for the same reason. This model was designed for guiding the monitoring of non-compliance with law, not assessing policy options for changes to current industry practices. The 'likelihood' of a hen experiencing behavioural deprivation in a conventional cage, or pain from beak trimming, is not low, moderate, or high. It is a certainty. The application of this model to poultry welfare standard setting is therefore somewhat awkward and confused. We recommend that it be removed and replaced with a focus on minimising *impacts* to poultry welfare.

The Productivity Commission also states that (Productivity Commission, 2016, p.230):

> A RIS aims to identify the option that provides the highest net benefits to the community as a whole, balancing economic and social considerations. The value of independent and credible animal welfare science and research on community ethics will be undermined if the RIS process is not performed rigorously and if final decisions are not made transparently and in the interests of the community as a whole.

It is notable that independent and credible animal welfare science and research on community ethics has not been undertaken as part of the development of the poultry standards. This omission accentuates the need for rigour and transparency in the analysis of costs *and* benefits within the RIS.

The Productivity Commission has been critical of the way animal welfare standard-setting processes have been undertaken in Australia (including those managed by Animal Health Australia). In its 2016 report it found that such processes do "not adequately value the benefits of animal welfare to the community" (Productivity Commission, 2016, p.199). Based on the limited analysis of the benefits of animal welfare to the community in the RIS, we are concerned that this important aspect of the process will yet again be overlooked.

EVALUATION OF POULTRY WELFARE IMPACTS

The evaluation of poultry welfare impacts in the RIS is fundamentally lacking. The RIS correctly sets out the different frameworks for assessing animal welfare based on measures of biological functioning, affective states, and natural living (RIS, pp.9-10, 54-55) and notes that simply considering the number of animals affected by a practice fails to provide "information regarding the duration of the effect nor the impact of the effect on each animal" (RIS, p.55). While it is acknowledged that determining impact on each individual animal is very difficult, taking into account the duration, scope, and variability of the effect is not. This can be determined quantitatively.

For instance, the impact of behavioural deprivation on hens in conventional cages is an experience that every hen in the facility faces every day for the duration of their productive lives. It lasts for approximately 18 months and is unchanging. Conversely, incidents of feather pecking are generally sporadic in nature, experienced by a percentage of hens, is highly variable between farms, and its rates of occurrence can be affected by management practices.

These differences are highly significant for assessing impacts to animal welfare and net benefits of different regulatory options. Yet the RIS makes no attempt to factor into account such differences when weighing up the animal welfare advantages and disadvantages of the regulatory options. Instead, the RIS simply lists the issues without further interrogation of the duration, scope, or variability of the impact (see for instance, Appendix 16 and Table at pp34-38). A summary of welfare science for some of the key issues is included at Appendix 21 but there is little evidence in the RIS of any attempt to incorporate this information into the assessment of animal welfare impacts for the purposes of evaluating the various regulatory options.

The somewhat crude approach taken to welfare assessment in the RIS has led to perverse conclusions such as stating that it is indeterminate whether phasing out conventional cages, reducing stocking densities, or banning hot blade beak trimming or routine second beak trimming would result in animal welfare benefits (RIS, pg.x). This is not simply saying that the benefits of such standards are indeterminate, it is saying that whether there are any benefits at all from such standards are indeterminate. This is contrary to the weight of current scientific evidence (as outlined in Part 2 of this submission) and the conclusions of national animal welfare advisory bodies such as the European Union Scientific Veterinary Commission, the New Zealand National Animal Welfare Advisory Committee, and the Canadian Farm Animal Care Council.

The limitations of the animal welfare assessment are also evidenced by the highly misleading table of advantages and disadvantages for different layer hen housing systems at pages 34-38 of the RIS. We question where the RIS consultant obtained the information presented in this table. No references are provided to support the statements made and many of the claims are highly dubious. The table appears in a section of the RIS considering the "Risks to animal welfare" and is supposed to be presenting the animal welfare advantages and disadvantages of the different systems, yet it goes on to list environmental, financial, and work health and safety issues. These issues fall outside the remit of the RIS. The RIS provides the following explanation regarding its consideration of work health and safety issues in a footnote which states, "Whilst the proposed standards and other options are focused on animal welfare problems and issues, WHS issues can be an unintended consequence that needs to be considered." Environmental and work health and safety issues could potentially be considered as compliance costs if there was evidence to show a direct correlation with the proposed regulatory options but they should not be presented in their own right as stand-alone considerations in an assessment of animal welfare risks. Financial issues should – and are - considered in the costs assessment throughout the RIS.

The environmental, financial, and work health and safety issues should be removed from this table and the duration, scope, and variability of the welfare impacts should be incorporated into the evaluation of welfare benefits throughout the RIS.

EVALUATION OF REGULATORY OPTIONS

Option C

RSPCA Australia considers Option C to largely represent current industry practice. No information has been provided in the RIS that suggests otherwise. We therefore question the estimated cost of $709 million. The largest component of these costs ($449 million) relates to SA9.15, which prohibits the removal of more than one-third of the upper and lower beaks. This is an extraordinarily high cost for a standard that was thought to already be practiced by the vast majority of the industry. There was no serious debate in the Stakeholder Advisory Group meetings over this standard. Industry representatives did not raise any significant concerns. There was discussion over the technology used to beak trim (infrared v hot blade) and the routine nature of beak trimming but not the length of trim. This suggested the standard was uncontroversial in that it did not significantly alter current industry practice. But now it appears to be imposing a $449 million cost on industry.

The RIS provides no further insights on current industry practice with respect to beak trimming, despite this being a major assumption upon which the $449 million cost was based. The RIS simply states that "a lot of discussion with the standards and guidelines working group has been undertaken on proposed standards SA9.15 and it has been deemed to be a significant cost due to likely increased mortality (with mortality rates depending on the production system) which will have an impact on the hen flocks." There is no breakdown of what current industry practice is with respect to beak trimming. How many producers trim more than one third of the upper or lower beaks and where is the evidence of this? Instead, the RIS simply provides a panel (A2.2) that sets out the expected increase in mortality rates with the accompanying reference, "Provided by AECL". This is not acceptable for such a significant cost estimation. It has a major impact on the cost/benefit analysis and greater transparency is required around this and other claimed costs.

The RIS acknowledges that a number of current industry practices "have not kept pace with animal welfare science and society's expectations" and therefore present "significant risks to poultry wellbeing" (RIS, p.28). This underscores the importance of moving beyond Option C and including one of more of the additional options D to G as well.

Option D

The cost and benefits analysis of Option D suffers from fatal errors. As noted above, the role of regulation impact assessment is to assess the costs and benefits likely to be incurred as a result of the proposed regulation. The relevant costs are those imposed by the regulation, not those incurred due to voluntary industry decisions based on commercial considerations. In other words, there must be a direct causal relationship between the regulation and the costs assessed. Costs incurred due to the voluntary commercial decisions of industry are beyond the scope of *regulation impact* assessment.

Accordingly, when it comes to a proposed phase out of conventional cages, the appropriate cost impacts to be assessed, are those associated with moving from conventional cages to the next cheapest production option. Assessing costs associated with transitioning to the most expensive production option, based on voluntary commercial decisions, goes beyond the scope of regulation impact assessment and significantly distorts the cost analysis.

However, this is precisely what the RIS does. It relies, again, on undisclosed and non-validated data "provided by AECL" to develop key assumptions regarding the projected conversion to alternative systems following a imposed phase out of conventional cages. These assumptions are presented in Panel A1.1 (page 106) and show an anticipated transition of 0.7% into furnished cages, 53% into barn, and 46% into free range. There is nothing in the proposed standards or regulatory options that would require producers to transition into free range systems. This would be a voluntary commercial decision. It is therefore outside the scope of the RIS and should be taken out of the analysis.

In addition, we believe the appraisal of net market forces at A3.3.1 is overly conservative in light of the controversial public profile of conventional cage eggs and the rate of commitments being made by major multinational retailers and food manufacturers in recent years. The breadth and scale of such commitments are clearly documented at the website: www.welfarecommitments.com. We believe the RIS significantly underestimates the cumulative impact such commitments will have on the demand for cage eggs within the next 5 to 10 years.

RSPCA Australia also obtained independent economic advice on this question. The advice described the RIS appraisal of net market forces as "extremely conservative" and concluded that a net market effect of -26.6% over 10 years was a more realistic projection in light of the sustained trend of major food service, manufacturer, and retailer commitments to go "cage free" (BG Economics, 2018).

We are also unable to find evidence demonstrating that the RIS has factored into account the relative age of current cage infrastructure and need for upgrade or replacement. We are aware that there has been little to no investment in new conventional cage infrastructure in Australia since 2008 and that much of the existing cage infrastructure is old and in need of upgrade or replacement in any event. We are also aware that some cage facilities are set up as 'furnish-ready' to allow for the easy installation of furnishings. Accordingly, this should be quantified and factored into the analysis as a discount rate on the costs of conversion and new infrastructure.

The New Zealand National Animal Welfare Advisory Committee factored in an average lifespan of 18 years for conventional cages when developing its 10 year phase out strategy (New Zealand National Animal Welfare Advisory Committee, 2012). If a similar infrastructure lifespan is applied in Australia, this would mean that all current cage infrastructure would require replacement by 2028. This would be within the 10 year phase out period proposed by Option D(10).

The final issue we would like to address relating to the cost assessment of Option D concerns the extraordinarily high costs associated with SA9.15. As with Option C, SA9.15 accounts for a significant proportion of the total costs for Option D(10) and the largest proportion of overall costs for Option D(20), estimated to be $608 million and $529 million, respectively. The RIS provides no further insights into the assumptions underpinning these costs in its analysis of Options D(10) and D(20). The RIS must be revised to provide greater transparency around these costs and assumptions.

Finally, in addition to the flaws in the costs assessment, the evaluation of poultry welfare benefits for Option D is severely lacking. This evaluation appears to consist only of the highly misleading table presented at pages 34 to 38 (critiqued above under section 'Evaluation of Poultry Welfare Impacts') and brief discussion following at page 39. Again, this discussion ignores critical components of welfare evaluation relating to duration, scope, and variability of impacts. Such components led the New Zealand National Animal Welfare Advisory Committee to recommend the phasing out of conventional cages (2012, p.12):

> NAWAC believes that the disadvantages that are intrinsic to the use of cages outweigh the positive aspects of these cages. Moreover, the disadvantages that are imposed on the hens in cages are imposed on every single hen for the entire duration of the laying period. There are advantages and disadvantages in terms of welfare in each different commercial laying hen system but the disadvantages of other systems are much less certain and are unlikely to affect every individual to a similar degree than the constraint placed on the birds in the cage system.

It is critical to the integrity of the RIS and its evaluation of animal welfare benefits that duration, scope, and variability of welfare impacts be factored into the analysis. This can, and should, be quantified for the purposes of the cost/benefit analysis.

Option E

The RSPCA supports a reduction in stocking density for meat chickens to:

- 34kg/m^2 for tunnel ventilation systems; and
- 28kg/m^2 for natural ventilation systems.

And a reduction in stocking density for layer hens to:

- 9 birds/m^2 of the usable area for tiered systems; and
- 7 birds/m^2 of the usable area for floor-based systems.

We provide scientific evidence supporting these densities in Part 2 of this submission.

As with Options C and D we have concerns regarding the over-reliance on undisclosed data from industry for the development of basic assumptions contained in the RIS. We know that at least 70% of the meat chicken industry in Australia stocks at densities of 34kg/m^2 as they are under the RSPCA Approved Farming Scheme. However, we do not know if this current industry practice has been adequately factored into the cost analysis. The data upon which these cost assumptions are based should be disclosed as opposed to simply referencing "provided by ACMF".

Option F

Option F considers the requirement for furnishings such as perches, nest boxes, and litter to be provided for all chicken layers. In effect, this option requires a phase out of conventional cages as, by definition, a conventional cage is one that does not include furnishings.

RSPCA Australia supports the requirement for furnishings to be provided for all chicken layers as discussed in further detail with reference to scientific support in Part 2 of this submission.

Option G

The RSPCA supports a prohibition on routine beak trimming with allowance for justified exceptional circumstances. Further detailed information regarding our position on beak trimming and the proposed standards is provided in Parts 2 and 3 of this submission.

DISTRIBUTION OF COSTS FOR OPTIONS C AND D

The RIS does not provide any consideration of the extent to which the costs of the proposed options can be distributed along the supply chain, particularly to consumers. All costs in the RIS are simply attributed to producers when in reality many of the identified costs will be distributed throughout the supply chain and incorporated into the wholesale or retail price of the product. When this is broken down on a per egg unit basis, the significance of the costs and their distribution can more readily understood by stakeholders, government, and the public. This discussion also considers the option of government assistance for industry transition and infrastructure costs.

RSPCA Australia sought independent advice on these issues from economic consulting firm BG Economics. The following are extracts from its subsequent report – *Phasing out conventional cage egg production in Australia: A 10-year transition analysis, February 2018*:

If Option D were to be adopted as costed in the RIS, the extra cost burden would need to initially be met by the producer who would either absorb the cost or pass the cost on to egg consumers over time in the form a slightly higher egg prices, or they could absorb a portion of the cost and pass a portion on to consumers.

In the event producers passed the entire $1339.18 million on for Option D (layer hens only), or $133.92 million for one year, and assuming 5.51 billion eggs sold in a year (459.2 million dozen eggs in FY2016-17), this would result in an average premium of approximately 2.4 cents per egg for the consumer. It should also be noted that producers would be required to fund and absorb or pass on the cost of Option C if implemented being $517.01 million (layer hens only) over 10 years (51.7 million/year) resulting in an estimated premium of approximately 1 cent per egg for the consumer. Therefore, the extra premium to be paid by the consumer for Option D (10) above that which is currently proposed is estimated to be 1.4 cents per egg.

Such a premium is a small additional price for consumers. However, some firms either due to their size or other factors may be unfairly burdened by trying to recover any upfront outlay required to transition away from conventional cage egg production. In such instances, this cost burden could be either fully or partially met by an industry structural adjustment program (or similar). As identified previously, most of the extra cost burden is placed on NSW, Queensland and Victoria. For South Australia, Western Australia and Tasmania the extra cost burden is far less (in absolute terms, not relative terms).

Government funded industry packages, particularly federally funded packages, are not uncommon in the agricultural industry which compensates producers for the cost of government decisions in regard to agriculture including:

- *Dairy Structural Adjustment Program Scheme 2000 (DSAP Scheme)*
- *Supplementary Dairy Assistance Program (SDA)*
- *Sugar Industry Reform Package Sugar Industry Reform Programme (SIRP 2004)*
- *Tobacco Grower Adjustment Assistance Package (TGAAP)*
- *Premium Fresh Tasmania Regional Food Producers Innovation and Productivity Program (RFPIPP)*

The Dairy Structural Adjustment Program (May 2000 to December 2008) had a total budget of $1.63 billion.

Types of adjustment package include:

- *Industry Restructuring - To make the industry overall more sustainable, can include exit assistance*
- *Enterprise assistance*

- *Labour market assistance*
- *Inward investment*

Financial impact on consumers of phasing out conventional cage eggs

The RIS identifies the retail price of cage eggs (almost all conventional cages) as at June 2016 as being $3.24/dozen; barn laid $4.68; free range $5.40; and specialty eggs $9.24. This equates to $0.27 per egg for cage; $0.39 for barn laid; $0.45 for free range and $0.77 for a specialty egg (e.g. organic).

It is important however to note that the free range egg price includes different stocking densities. Free range eggs from stocking densities of 1,500 birds/hectare are typically more expensive than free range eggs where there is a maximum stocking density of 10,000 birds/hectare. The average shelf price of a free range egg from a 10,000 bird/hectare farm is therefore likely to be closer to $0.40/egg or $4.80 per dozen than $0.45/egg ($5.40/doz.). Indeed, these '10,000 bird' free range eggs are sometimes sold by large supermarkets as low as $4.20 per dozen for a 700g carton and $3.80 per dozen for a 600g carton. Barn laid eggs too are from time to time on special as low as $3.60 per dozen (700g carton) as opposed to $4.68 per dozen.

It is our view that the shelf price of barn laid eggs and densely stocked free range hens (10,000 birds/ha), although not likely to go as low as current cage egg prices, will be only marginally higher as economies of scale, competition and innovation are realised over the 10-year phase out period and regulatory certainty is introduced thereby stimulating new investment, new technologies and improved farming practices. Indeed, as IBISWorld notes:

> *Larger farms have the greatest total costs but tend to have the lowest per-unit costs. These establishments benefit from cost savings created through economies of scale in production.*

Non-cage farm sizes are typically 'small' (>5,000 – 100,000 chickens) or 'micro' (<=5,000 chickens) meaning economies of scale are likely to be realised in the event of conventional caged egg phase out as farms seek to consolidate with regulatory certainty to maximise profits, leading to likely lower production and shelf prices. It is acknowledged that there are sometimes constraints to doing this e.g. planning controls and availability of land.

The table below provides an estimate of the retail price effect per egg from realised economies of scale and other factors. Understanding the retail price effect per egg is the best way to calculate the financial impacts on individual consumers. While in 2017 per capita egg consumption was 231, this figure is achieved by simply dividing the total number of eggs consumed in a single year by the population of Australia. This is a very crude statistic as the very young and the very old are unlikely to be big egg consumers, some (body builders for instance) may consume more than 500 eggs per year, while vegans will not consume any eggs at all.

The aim is to provide an indication of the decrease in retail (shelf) price that is likely to result from egg producers increasing economies of scale for barn laid and, especially, free range production. A reasonable assumption is that a 10 per cent decrease in shelf price for consumers is likely to be achievable due to future economies of scale, innovation and competition in the industry. Furnished cage and speciality/organic egg production is not considered.

Likely retail price (rounded) of eggs due to future economies of scale, etc

Production type	***5%***	***10%***	***15%***	***20%***
Barn laid ($0.39/egg, 2016)	*$0.37*	*$0.35*	*$0.33*	*$0.31*
Free range ($0.45/egg, 2016)	*$0.43*	*$0.41*	*$0.38*	*$0.36*

Estimated consumer surplus due to future economies of scale, etc. (10%)

Egg Consumers	*Barn laid*	*Free range*
Barn laid ($0.39/egg, 2016)	*(-) $0.08*	*(-) $0.14*
Free range ($0.45/egg, 2016)	*(+) $0.04*	*(-) $0.02*
Current free range egg consumers, $0.45/egg	*(+) $0.10*	*(+) $0.04*

Current cage egg consumers

Under Option D with conventional cage-egg phase out, consumers would have the option of purchasing furnished cage eggs, barn laid, free range, or specialty eggs. Assuming a 10 per cent price decrease from economies of scale, innovation, competition and other market forces, this group of consumers would experience a negative consumer surplus (required to pay more for their eggs). For example, purchasing barn laid eggs (next best option) if conventional caged eggs were phased out is estimated to result in an ***additional cost*** *of:*

- *100 eggs/year purchased: $8.00 ($0.08/egg)*
- *200 eggs/year purchased: $16.00*
- *300 eggs/year purchased: $24.00*

Note – a premium (estimated at 2.4 cents per egg) may also apply due to the costs incurred by egg producers as detailed in the previous section.

Current barn laid egg consumers

Under Option D with conventional cage-egg phase out, consumers would have the option of purchasing furnished cage eggs, barn laid, free range, or specialty eggs. Assuming a 10 per cent price decrease from economies of scale, innovation, competition and other market forces, this group of consumers would experience a consumer surplus (pay less for their eggs). Continuing to purchase barn laid eggs if conventional caged eggs were phased out is estimated to result in a ***cost saving*** *of:*

- *100 eggs/year purchased: $4.00 ($0.04/egg)*
- *200 eggs/year purchased: $8.00*
- *300 eggs/year purchased: $12.00*

Note – a premium (estimated at 2.4 cents per egg) may also apply due to the costs incurred by egg producers as detailed in the previous section.

Current free range egg consumers

Under Option D with conventional cage-egg phase out, current free range egg consumers would have the option of purchasing furnished cage eggs, barn laid, free range, or specialty eggs. Assuming a 10 per cent price decrease from economies of scale, innovation, competition and other market forces, this group of consumers would experience a consumer surplus (pay less for their eggs). Continuing to purchase free range eggs if conventional caged eggs were phased out is estimated to result in a ***cost saving*** *of:*

- *100 eggs/year purchased: $4.00 ($0.04/egg)*
- *200 eggs/year purchased: $8.00*
- *300 eggs/year purchased: $12.00*

Note – a premium (estimated at 2.4 cents per egg) may also apply due to the costs incurred by egg producers as detailed in the previous section.

This report finds that:

- *The producer cost burden of Option D (10 years, layer hens only) of $1339.18 million over ten years is estimated to result in an average premium of 2.4 cents per egg for the consumer. Option C is estimated to result in a premium of approximately 1 cent per egg meaning that the extra premium to be paid by the consumer for Option D (10) above that which is currently proposed is estimated to be 1.4 cents per egg.*
- *Current cage egg consumers are likely to experience a cost increase due to cage egg phase out estimated to be 8 cents per barn laid substitute egg. Current barn laid and free range egg consumers are likely to experience a cost saving estimated at 4 cents per egg. These amounts do not include any pass-on producer cost premium which is estimated at an average of 2.4 cents per egg.*

Breaking down the costs on a per egg unit basis as per the above analysis provides a different perspective on the potential costs and assists stakeholders, government, and the public to digest the cost implications of the regulatory options. We recommend the RIS include such cost breakdowns. It is also important to note the option of possible government assistance packages for industry transition and infrastructure costs. In light of the high degree of community concern for the welfare impacts of the conventional cage system, such assistance packages should be seriously considered by government.

SECTION 2 - RSPCA RECOMMENDATIONS WITH SCIENTIFIC EVIDENCE

SUMMARY OF RSPCA RECOMMENDATIONS

Induced moulting

The proposed standards allow forced moulting where birds coming towards end-of-lay undergo a period of stress because of a sudden change in feed and, as a result, lose a large amount of feathers and body weight.

RSPCA recommendation: Standards must be introduced in Chapter 2 – Feed and water to ensure that poultry are not forced to moult.

Prohibition of barren cages for all species and a phase out for layer hens

Despite the extensive and serious negative welfare effects of battery cages, they are still permitted in the proposed standards.

RSPCA recommendation: The RSPCA urgently recommends that a standard be included in Part A – 4 Facilities and Equipment, to prohibit housing any birds in conventional cages, and a standard in Chapter B1 – Laying Chickens to ensure that battery cages for layer hens are phased out.

Perches

There are proposed guidelines recommending that perches be provided. However, these are not standards.

RSPCA recommendation: The inclusion of a standard in Chapter 4 – Facilities and equipment to ensure adequate perch space is provided to all poultry with a motivation to perch.

Provision of nests for hens of all species that lay eggs

There are proposed guidelines recommending sufficient nests for hens, but these are not standards.

RSPCA recommendation: That guideline GB1.6 become a standard in Chapter 4 – facilities and equipment to ensure that hens of all species are provided with a nest.

Provision of environmental enrichment

There is a guideline encouraging the consideration of environmental enrichment but no requirement to provide birds with an enriched environment.

RSPCA recommendation: A standard be introduced in Chapter 4 – facilities and equipment, to ensure that all species are provided with environmental enrichment appropriate to the species, with guidelines in species-specific chapters.

Light levels and photoperiod

The proposed standards allow poultry to be kept in near-dark conditions for most of their lives, not allowing the expression of normal behaviours and eye development, and without adequate light and dark periods for normal behaviour and rest.

RSPCA recommendation: The amending of standard SA6.3 in Chapter 6 – Lighting to ensure that the minimum light intensities for all poultry be increased to at least 10 lux, and amending standard SA6.5 to require 8 hours of continuous darkness in each 24 hour period for all poultry.

Litter and dustbaths for all poultry

There is no standard requiring that poultry be provided with litter.

RSPCA recommendation: The inclusion of a standard in Chapter 8 – Litter management that ensures all poultry housed indoors have access to a littered area to allow birds to forage and dustbathe.

Beak-trimming and bill trimming

The proposed standards for beak and bill trimming of poultry do not acknowledge the pain associated with this procedure.

RSPCA recommendation: Stricter standards must be introduced in Chapter 9 – Handling and husbandry around beak and bill-trimming to ensure that it is not performed unless necessary for animal welfare reasons, and it is performed appropriately using the least harmful methods, with minimal impacts on the birds.

Multiple pick-ups

The standards do not acknowledge the practice of thinning which has negative effects on bird welfare.

RSPCA recommendation: Standards should be introduced to Chapter 9 – handling and husbandry to place limits on the number of times that pick-ups may be performed per batch.

Stunning, slaughter and on-farm killing

The proposed standards must include specifications to avoid serious risks to poultry welfare at abattoirs and on-farm.

RSPCA recommendation: More requirements are needed in Chapter 11 – poultry at slaughtering establishments, and in chapter 10 – humane killing to minimise significant welfare risks.

Space – lower stocking densities

The proposed standards for minimum space allowance for birds are inadequate as they do not give birds enough space to move freely or carry out normal behaviours.

RSPCA recommendation: Maximum stocking densities be decreased for all species in each species-specific section, so that each individual bird has more room to move and express its normal behaviours.

Slower growth rates

There are no standards or guidelines placing limits on growth rates.

RSPCA recommendation: The RSPCA recommends that standards, and at the very least guidelines, be introduced to place limits on the growth rate of meat chickens in section B2.

INDUCED MOULTING

Current draft standard(s)/guideline(s)

SA9.4 A person in charge must ensure that induced moulting is not routinely practiced.
SA9.5 A person in must ensure poultry are in adequate physical condition to endure an induced moult if necessary.
SA9.6 A person in charge must ensure that poultry induced to moult are:
1) in adequate physical condition to endure another lay cycle; and
2) not deprived of feed or water; and
3) not fed a high fibre/low energy diet for longer than 20 days or body weight loss of no more than 25%; and
4) provided with a calcium supplement.

RSPCA recommendation

1) SA9.4 A person in charge must ensure that poultry are not induced to moult.

Evidence supporting RSPCA recommendation

The RSPCA is opposed to the practice of forced, or 'induced' moulting because:

1. It directly contravenes one of the most basic standards to ensure the welfare of poultry: *SA2.1 A person in charge must ensure that poultry have reasonable access to adequate and appropriate feed and water*.

2. The significant and rapid reduction in body weight due to inadequate feed is a clear indication that the birds' needs are not being met.

A rapid reduction in bodyweight clearly indicates that birds are not receiving sufficient nutrition and would be experiencing hunger and frustration, and decreased bone mineral density. McCowan et al. (2006) found that birds which were forced to undergo induced moulting, whether by feed withdrawal or non-feed withdrawal methods were more aggressive during the moulting period. The rate of aggression during the moult treatment was approximately 80% higher than during the pre-moult period. Cage pecking also differed in fast induced and non-fast induced (low quality diet) birds, compared with no moult birds.

The RSPCA recommends that the standard specifically states that induced moulting must not be performed. The RSPCA acknowledges that induced moulting is sometimes used in extreme circumstances such as during food shortages, and that an exemption may be applicable to this standard in extreme cases. If an exemption is placed on induced moulting being carried out in extreme circumstances, consideration needs to be given to:

1. the length of time that low quality diets may be fed (and the impact of feeding low quality diets), and
2. the amount of body weight that may be lost.

PROHIBITION OF BARREN CAGES FOR ALL SPECIES AND A PHASE OUT FOR LAYER HENS

Current draft standard(s)/guideline(s)

SA4.1 A person in charge must take reasonable actions in the construction, maintenance and operation of facilities and equipment to ensure the welfare of poultry.

Note in standards:

Meat chickens include birds (*Gallus gallus*) being reared and managed for meat production purposes and do not include birds being reared and managed for the purpose of breeding meat chickens (see Part B3). While meat chickens in Australia are currently reared and managed using only non-caged systems of husbandry, this Part should not be interpreted as precluding the future use of innovative husbandry systems offering improved animal welfare outcomes.

RSPCA recommendation

The RSPCA urgently recommends that conventional cages used to house any species of poultry be prohibited and phased out where used.

In the introduction to the draft Standards & Guidelines, it is stated: 'Adherence to good animal husbandry principles is essential to meet the welfare requirements of animals. Good husbandry principles that also meet the basic physiological and behavioural needs of poultry, and include: space to stand, lie and stretch their wings and limbs.'

Cages do not meet the intent of standard SA4.1 (above), nor do they meet the basic physiological and behavioural needs of poultry (as stated in the introduction). There is a large, widely acknowledged body of scientific evidence which shows that birds are unable to perform basic behaviours in conventional cages and cannot experience good welfare.

The European Scientific Veterinary Committee concluded in 1996 that the welfare conditions of hens kept in conventional cages are inadequate, and their needs cannot be met in conventional cages. The Council Directive 1999/74/EC stipulated that the highest possible standards should therefore be introduced to improve conditions, and that barren conventional cages be prohibited as of 2012.

Proposed standards

SA4.x Housing birds in conventional cages is prohibited, with effect from *(insert date)*. In addition, with effect from *(insert date)* no conventional cages may be built or brought into service for the first time.

The addition of standards to every species-specific section to prohibit the use of conventional cages.

Evidence supporting RSPCA recommendation

The following information highlights key welfare issues relating to housing poultry in conventional cages and supports the conclusion that conventional cage systems must be phased out urgently.

Osteoporosis and susceptibility to fractures are problems that face layer hens in all types of housing systems (Widowski et al. 2013). High rates of egg production are thought to weaken the leg and wing bones in particular. However, it is generally accepted that a lack of movement is the main cause of bone fragility in hens (EFSA 2005). In conventional cages, hens are not able to exercise or perch, and their movement is severely restricted. This severe behavioural restriction, including the inability to walk or fly, contributes to bone weakness (LayWel 2006). When birds from conventional cages are handled, it results in a very high rate of bone fractures. Typically, furnished cages allow hens to perch, which contributes to improved bone strength (Lay et al. 2011). However, they are still unable to perform their full behavioural repertoire, including foraging, ground-scratching, and dustbathing.

Locomotion is severely restricted in cages, which contributes to disuse osteoporosis (LayWel 2006). In addition, maintenance and thermoregulatory behaviours are significantly compromised (Nicol 1987; Lay et al. 2011). Non-infectious diseases, including fatty litter and osteoporosis, are more prevalent in conventional cages compared with systems that allow a greater opportunity for behavioural expression and movement (Kaufman-Bart 2009; Lay et al. 2011; Widowski et al. 2013). Fatty liver is a common metabolic disease mainly seen in layer hens housed in cages (EFSA 2005). It causes rupture of the liver and sudden death. Factors which are thought to contribute to the development of fatty liver include a lack of exercise and restricted locomotion, high environmental temperatures, and a high level of stress (EFSA 2005). Non-infectious diseases which may be attributed to a lack of movement such as disuse osteoporosis and fatty liver are very difficult to manage in conventional cages due to the inherent extreme behavioural restriction.

When meat chickens are housed on wire flooring and not able to access litter, they experience persistent footing instability and mechanical and physiological stress. This physiological stress of housing meat chickens on wire combined with fast growth rates, results in higher rates of infections and lameness (Wideman 2016). Bacterial chondronecrosis (death of cartilage) with osteomyelitis (infection of bone) is the most common cause of lameness in commercial broilers (Wideman et al. 2012), and housing broilers on wire flooring has been found to consistently trigger high incidences of bacterial chondronecrosis with osteomyelitis and lameness (Wideman 2015). Housing broilers in cages is also known to cause skin and leg conditions that compromise welfare, and a caged environment may also cause fear and stress in the birds (Shields and Greger 2013).

Infectious diseases may be more readily contracted and spread in floor-based housing systems, while non-infectious diseases can be more prevalent in cage systems. Infectious diseases can be managed. Management includes strict biosecurity practices and vaccination programs. There has been a consistent decline in the proportion of birds with viral (Marek's disease), parasitic (coccidian and helminths), and feather-pecking and cannibalism during the 12 years since the 1999 ban on conventional cages in the European Union. This change is thought to be due to improved vaccination, and greater emphasis on management in litter-based and free-range systems (Kaufman-Bart 2009; Widowski et al. 2013; Fraser et al. 2013). Vaccination and hygiene are reportedly the most effective precautions against infections. Control strategies have brought about a marked decline in notifiable diseases, especially *Salmonella* Enteritidis (Kaufman-Bart 2009). In addition to the greater emphasis on day-to-day management and stockpersonship, there is work being done across Europe to optimise the long-term management of non-cage systems, such as the LayWel and Hennovation projects in the UK which include management strategies aimed at controlling the expression of feather-pecking.

Non-infectious diseases which are mainly attributed to, or exacerbated by, the lack of movement in conventional cages cannot be remedied by management. The problems associated with fatty liver, kidney disease, and osteoporosis require changes in housing system to allow the birds to move and exercise sufficiently, thereby alleviating the problems associated with non-infectious diseases.

When housing constraints prevent poultry from performing behaviours which they are motivated to perform, this presents a welfare concern since birds experience emotional distress, and physical consequences including compromised biological function, or harmful variants of the behaviour such as feather-pecking and hysteria (Lay et al. 2011). Welfare problems can result when the environment unduly constrains the basic movements and behaviours of animals. This has been quantified in various studies which assess an animal's motivation to perform certain behaviours, by measuring how much an animal will work to be able to perform those behaviours (Dawkins et al. 2004; Fraser et al. 2013).

In 1999, the European Commission passed the Directive (CEC, 1999) requiring that by 2012 all barren conventional cages be prohibited, and that all cages must be furnished, and provide at least: 750 cm^2 of floor space per hen, of which 600 cm^2 is at least 45 cm high, a nest, a littered area for scratching and pecking, 15 cm of perch, 12 cm of food trough per hen, and a claw-shortening device (Appleby et al. 2002). Appleby (2002) compared furnished and conventional cages; behaviour was more unrestricted and varied, and physical condition was better in hens in furnished than conventional cages. Furnished cages generally allow more movement than conventional cages, and allow for some expression of the most highly motivated behaviours which are prevented in conventional cages. However, there is still behavioural restriction in furnished cages. Locomotion, wing-flapping, flying, dustbathing, ground-scratching, ground-pecking and foraging are limited, and not able to be

performed satisfactorily. This is due to the limited space available and the amount of substrate that is provided, which may be quickly depleted (Lay et al. 2011). The large spaces provided to birds in non-cage systems allow greater opportunities for locomotion. Locomotion is increased because resources are spread out horizontally and sometimes vertically. However, movement may be compromised if stocking densities are too high (Leone and Estevez 2008; Lay et al. 2011).

All species of poultry confined to conventional cages are severely limited in their ability to perform any behaviours. This includes basic movements. Hens in conventional cages suffer extreme behavioural inhibition, and are unable to walk, flap their wings, lay eggs in a nest, or perch. They suffer the poorest bone strength of all housing systems, and the highest number of fractures incurred at depopulation. Hens have been found to perform higher levels, or 'rebound' levels of wing-flapping, tail-wagging, and stretching when they are moved to a large space after weeks of confinement in a small area, with some behaviours correlated to the duration of confinement. This indicates that hens do not adjust to prolonged spatial restriction (Nicol 1987; Lay et al. 2011).

While cages allow greater control over the environment and bird health and a lower incidence of fractures incurred throughout production when compared to non-cage systems, it is important to consider the full impact on the welfare of the hens. Hens do not only possess physiological needs for food, water, thermal comfort, and freedom from disease. They also have innate behavioural needs, such as those for nesting and dustbathing. Allowing hens the opportunity to perform behaviours which they demonstrate that they are motivated to perform is central to achieving positive welfare states (Mellor and Webster 2014). Conversely, the inability to perform these behaviours including comfort movements, foraging and nesting behaviour, has negative welfare impacts (Nicol et al., 2017). Conventional cages have no provisions for the expression of innate behaviours. These behaviours include:

Movement

Animals require an absolute amount of physical space to extend their limbs and perform basic movements including changing posture and turning around. The amount of space required for a hen to turn around and stretch its wings is greater than the space which is provided in most conventional cages (Widowski et al., 2016; Nicol et al., 2017).

Examples of the amount of space required by hens to perform basic behaviours and the inhibition that is imposed by conventional cages is illustrated in the excerpt from Nicol et al. (2017):

The spatial restriction of the conventional cage prevents or constrains the performance of most comfort movements, and there are no resources to meet the birds' roosting and nesting needs. A limited amount of foraging can take place in the feed trough. At the high stocking rates and small cage sizes typical of a conventional cage, hens are effectively prevented from performing even simple locomotor and comfort movements.

In a classic paper, Dawkins and Hardie (1989) recorded the unrestricted behaviour of brown hybrids. They presented the following ranges of space occupied to turn around (540 to 1,006 cm^2), stretch wings (653 to 1,118 cm^2), wing flap (860 to 1,980 cm^2), preen (814 to 1,270 cm^2), and ground scratch (540 to 1,005 cm^2). More recently, in a video kinematic study of white hybrid layers, Mench and Blatchford (2014) determined the space required by hens to stand (563 cm^2), turn around (1,315 cm^2), lie down (318 cm^2), and wing flap (1,693 cm^2) (Nicol et al., 2017).

Birds without the ability to stretch or flap their wings, walk or run suffer disuse osteoporosis, frustration (which can manifest in rubbing on the sides of the cage and pacing) (LayWel 2006), and a decreased ability to thermoregulate. Access to feed and water may also be compromised due to high stocking densities (Lay et al. 2011). There is limited control in social interactions, and an ability to escape unpleasant situations in conventional cages, due to a lack of environmental complexity (Cordiner and Savory 2001).

Perching

Hens have demonstrated a strong motivation to access perches by pushing through weighted doors to access them (Olsson and Keeling 2002). The use of perches can reduce fearfulness and aggression (Donaldson and O'Connell, 2012), reduce bird density on the floor (Cordiner and Savory, 2001), lower the risks of piling and smothering (Lay et al., 2011), improve motor activity, and provide resting locations and places of refuge from aggressors (Cordiner and Savory, 2001; Lay et al., 2011; Yan et al., 2014). The provision of perches within the first four weeks of life has also been shown to reduce the risk of cloacal cannibalism in adulthood (Gunnarsson et al., 1999). The inability to perch decreases musculoskeletal health, and the ability to escape aggressors (which is more possible in non-cage systems which offer complex environments and multi-level perches) (Yan et al. 2014). Hens show signs of unrest when they are deprived of the opportunity to perch at night, and experience frustration and reduced welfare if perching is not possible (Olsson and Keeling 2002; Fraser et al. 2013).

Nesting

Nesting is identified as a behavioural priority for layer hens (Weeks and Nicol 2006; Lay et al. 2011), particularly immediately prior to oviposition (egg-laying). The need for layer hens to utilise a nest has been assessed by motivation tests, which have consistently demonstrated that it is a high priority (Widowski et al., 2013). Cooper and Appleby (2003) concluded that hens' work-rate to access a nest 20 minutes prior to egg-laying, as measured by the extent to which they were willing to work by pushing a push-door for resources, was twice the work-rate to access food after four hours of confinement without feed. If denied a nest, birds can become frustrated, pace, and retain their eggs beyond the expected time of lay (Yue and Duncan 2003; Widowski et al. 2013). In addition, the absence of a nest can contribute to cloacal cannibalism, due to the lack of an enclosed nesting area and the visibility of the cloaca during egg-laying (Newberry et al. 2004; Lay et al. 2011).

Dustbathing

Functionally, dustbathing is performed to clean the feathers (Lay et al., 2011). It acts to remove skin parasites, regulate the amount of feather lipids, and maintain plumage condition (Olsson and Keeling, 2005). Birds which are unable to dustbathe experience deteriorated plumage condition and the build-up of stale preen oil in the feathers (Scholz et al. 2014). It is an intrinsically motivated behaviour, and hens can perform 'sham' dustbathing in the absence of suitable dustbathing material, which lacks positive feedback (Widowski and Duncan 2000), and may indicate a reduced welfare state (Lay et al. 2011). Further, when birds are unable to dustbathe, plumage is in a poorer condition as it is dirtier, less waterproof, and less insulative (Scholz et al. 2014).

Foraging and exploration

Foraging is an important part of the normal behavioural repertoire of hens (LayWel 2006), and when litter is available, it is used extensively by hens for scratching and pecking (Ekesbo 2011). When litter is available, hens may spend the majority of their time ground-pecking and ground-scratching (Hartcher et al. 2015). Further, hens perform foraging behaviours even when feed is provided *ad libitum* (Lay et al., 2011; Widowski et al., 2013), a phenomenon termed 'contrafreeloading', demonstrating an innate behavioural motivation to forage for food (Widowski et al. 2013), (Lay et al. 2011).

There is extensive scientific literature on the motivation for poultry to perform the above behaviours, which improve welfare and decrease negative states.

Community expectations

Concern for the welfare of layer hens in conventional cages has probably attracted more debate than any other intensive husbandry system (Freire and Cowling 2013). A recent survey by McCrindle (2017) of 1000 Australians revealed that 84% of the Australian public are concerned about the welfare of hens in battery cages, and that 8 in 10 want to see battery cages phased out, an increase since previous research conducted in 2015 found 2 in 3 Australians were concerned about hens in battery cages.

Public concern for the welfare of layer hens is reflected in purchasing choices; the proportion of eggs produced from hens housed in conventional cages has fallen sharply over the past five years in Australia. Conversely, the proportion of free-range eggs sold has grown strongly over the past five years, despite the higher cost. Barn-laid eggs have also grown as a share over the past five years. Barn systems are relatively low-cost compared to free-range, but do not have the same negative connotations in relation to animal welfare as cage systems (IBISWorld, 2015).

The proportion of eggs from non-cage housing systems has steadily been growing since before 2012, and since 2012, non-cage eggs represent the highest value to the egg industry in Australia in terms of the grocery sales farming system market share, and have rapidly been growing since then (2011-2017 Australian Egg Corporation Limited Annual Reports). This change is reflective of Australians' concerns for animal welfare in conventional cages (IBISWorld 2015). The Australian Egg Corporation Limited annual reports show that while more expensive, at least half of consumers buy non-cage eggs, which, due to their higher prices, represent the majority of retail sales by value to the industry.

In addition to consumers purchasing more non-cage eggs, the retail and food service sector is making the switch with many large retailers making cage-free commitments. Among these, McDonald's, Woolworths, Coles, and Subway all started phasing out cage eggs from their supply chains. Woolworths and McDonald's have committed to being cage-free by 2018, with Coles removing cage eggs from their home-brand range (Chung 2015). This trend is expected to continue (IBISWorld, 2015).

However, the wholesaling, manufacturing and food service sectors largely use eggs from conventional cages. Due to this, despite the majority of consumers demanding non-cage eggs and purchasing non-cage fresh eggs at the supermarket, the majority of layer hens in Australia are housed in conventional cages. While there is little available public information on the number of hens in cages, it is estimated that 2/3 of all hens in Australia are housed in conventional cages. There has been debate over whether retailers should stock eggs sourced from conventional cage housing systems, and a Canstar Blue survey showed that 90% of consumers who buy cage eggs would happily switch to free range if the price difference was not so great (Canstar Blue, 2016).

Overseas

All countries in the European Union, which include Austria, Belgium, Bulgaria, Croatia, Republic of Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the UK have banned conventional cages. This was due to Directive 1999/74/EC which banned housing laying hens in barren conventional cages, and was effective from 1 January 2012. The directive was based on a report from the European Union's Scientific Veterinary Committee, and evidence has continued to mount since then, with several scientific reports published. The ban of conventional cages in the EU was affected by mounting scientific evidence, public pressure as well as by all sectors of society, including producers, retailers, consumers, legislators, and the media (Appleby 2003). Therefore, since 2012, all hens in the EU are required to be provided with dustbathing substrate, nests, perches, and a pecking and scratching area in order to allow hens to express their natural behaviours and satisfy their ethological needs (Guinebretière et al. 2014).

In Switzerland, cage systems for laying hens, both in conventional and furnished cages, are completely prohibited (Lukanov and Alexieva 2013). Sweden banned conventional cages in 2002. In 1989, egg farmers were given a period of 10 years to phase out conventional cages, which was later extended, and conventional cages were no longer used from 2002. In Austria, conventional cages were successfully prohibited in 2009, and furnished cages will also be banned by 2020. Similarly, Belgium has banned conventional cages and has proposed to ban furnished cages by the end of 2024.

New Zealand has implemented a six year legislative phase-out of conventional cages. The National Animal Welfare Advisory Committee developed the code, which will result in conventional cages being phased out by 2022. This change was in response to scientific evidence and strong public opinion, despite over 80% of eggs in New Zealand having been produced from conventional cages.

Canada has also announced a phase out of conventional cages over the next 20 years, by 2036. This change is led by the industry, the Egg Farmers of Canada, and represents a voluntary phase out, despite approximately 90% of egg production currently occurring in conventional cage systems. The industry plans to move to a 50-50 split in eight years, and 85% non-conventional cage systems in 15 years. The Egg Farmers of Canada state that this change is in response to the best available scientific research, as well as changing consumer preferences, and that the industry plans to diversify production practices in line with these developments (Heppner 2016).

In the United States, Michigan passed a law to ban battery cage confinement in 2009. Ohio, the nation's second-largest egg-producing state, banned the construction of new cage production facilities, and legislation to ban cages may be introduced in Massachusetts this year. In addition to legislative changes, nearly a hundred major companies have stopped sourcing eggs from conventional cages in the United States. These include McDonald's, Denny's, IHOP, Kroger, and Albertson's, with Walmart just announcing that they will source all of their eggs from cage-free sources. Walmart is America's biggest food seller, accounting for 25% of all groceries sold in the United States (Pacelle 2016).

Summary

The shift in welfare science from the avoidance of negative states to the experience of positive states has led to the understanding that good animal welfare cannot occur without the experience of positive affective states. Positive affective states in poultry require not only the absence of disease, hunger, and thirst, but also the expression of innate behaviours which they are strongly motivated to perform. For poultry, these behaviours include nesting (for hens of all species that lay eggs), foraging, ground-scratching, and dustbathing. The expression of these innate behaviours leads to better health and welfare, and conversely, the inability to perform these behaviours has negative effects on welfare.

The limitations of conventional cage systems and the extreme behavioural deprivation that they cause is a fundamental constraint of this type of housing system. Although some problems may be addressed through husbandry and genetic selection, the major issues which include behavioural inhibition, are unable to be addressed when birds are confined to conventional cages.

In meat chickens, cages contribute to very poor welfare by increasing the prevalence of mechanical stress and lameness. Introducing cages into the standards and guidelines for meat chickens is a step backwards, and something the RSPCA strongly opposes. The RSPCA acknowledges that keeping meat chickens in cages is not done extensively in Australia and that the standards are intended to allow future growth in this area. Future growth should not occur in this area. It is a practice which severely jeopardises poultry welfare, and a practice which Australia is moving away from.

The severe behavioural inhibition in conventional cages is inherent to the system. It is universally acknowledged that conventional cages cannot guarantee good welfare for any species of poultry. This has led to the ban of conventional cages for egg production across the European Union, and their phase out in New Zealand and Canada, as well as some states in the United States. In Australia, public concern has been growing, and the majority of the public support non-cage systems in theory as well as in practice, with non-cage systems representing the highest value to the egg industry in terms of grocery sales, and a number of retailers and food outlets making the switch to sourcing eggs from non-cage systems of production.

The future of the poultry industries in Australia needs to see conventional cages prohibited for all poultry species as a critical step forward in improving poultry welfare. State and territory governments, the poultry industries and animal welfare organisations must now come together to discuss appropriate timelines for a nation-wide phase-out.

PERCHES

Current draft guideline

Under section B1, Laying Chickens:

GB1.14 Perches should be provided at all times.

GB1.15 Perches should be provided at not less than 15 cm per bird unless a producer is able to demonstrate that this would obstruct movement of birds and people throughout the laying facility in which case no less than 7.5 cm per bird is permitted.

GB1.16 Perches should be constructed and positioned to:

- be raised above and not flush with floor areas
- allow birds to access them
- allow birds to stand in a normal posture
- provide a comfortable support for the bird's feet and keel bone
- minimise the risk of injury
- prevent vent pecking by birds below and/or behind
- minimise fouling of birds below.

RSPCA recommendation

RSPCA recommends the above guidelines be moved to standards in section 4A Facilities and equipment, so that all chicken layer hens, meat chickens, turkeys and all other poultry that have a strong motivation to perch are provided with perches at all times.

Proposed standards

There should be standards in each species-specific section for all species that have a motivation to perch, including chicken layers, meat chickens, and turkeys.

1. Perches must be provided at not less than 15 cm per bird.

2. Perching must be designed to support the whole of the bird's foot and be positioned and be of a height to allow birds to access perching with minimal effort.

Evidence supporting RSPCA recommendation

Behavioural motivation

Perching is an important natural behaviour in poultry, and laying hens have a strong motivation to perch. Providing perches allows them to perform their natural behaviour, therefore satisfying a behavioural demand (Lay et al. 2011; Yan et al. 2014). Hens have demonstrated this strong motivation to access perches in behavioural tests, for example by pushing through weighted doors (Olsson and Keeling, 2002).

Almost all layer hens use perches at night if adequate perch space is provided (Blokhuis 1983; Blokhuis 1984; Appleby et al. 2002; Lay et al. 2011; Fraser et al. 2013). They show signs of unrest when they are deprived of the opportunity to perch at night, and when accustomed to perching, display signs of

frustration and reduced welfare if they are unable to access perches (Olsson and Keeling 2002; Fraser et al. 2013; EFSA 2015).

Layer hens suffer extreme disuse osteoporosis and a high incidence of fractures due to bone fragility. The use of perches also improves musculoskeletal health and bone strength due to exercise (Lay et al. 2011; Yan et al. 2014). Enneking et al. (2012) provided pullets with perches from one day to 17 weeks of age. Birds with perch access had greater bone mineral content of the tibia, sternum and humerus, as well as greater muscle deposition at 12 and 71 weeks of age compared with birds without access to perches (Enneking et al. 2012; Yan et al. 2014).

Perches also have important effects on bird interactions. The provision of perches within the first four weeks of hatching has been shown to reduce the risk of injurious feather-pecking (Widowski et al. 2013). Perches may also be used extensively by subordinate hens to escape dominant members of the flock during the day time (Cordiner and Savory 2001; Yan et al. 2014).

Other welfare benefits associated with the use of perches include a reduction in fearfulness and aggression (Donaldson and O'Connell 2012), improvements in motor activity, and resting locations and places of refuge from aggressors (Lay et al. 2011). Gunnarsson et al. (1999) found that cannibalism in adulthood was reduced when perches were provided by four weeks of age. Other benefits of perches include a lower frequency of agonistic interactions and reduced bird density on the floor (Cordiner and Savory 2001), and potentially lower risks of piling and smothering (Lay et al. 2011). Invariably, conventional cages do not allow hens to perch.

Management practices can affect perch use. In particular, the rearing environment and whether pullets are provided with perches during rearing, the stocking density during the laying period, and the lighting programmes all affect how hens utilise perches (EFSA 2015). The use of perches may be improved later in life if pullets are given access during the rearing period; hens that do not have access to perches during the rearing period can experience difficulty using perches later in life due to low muscle strength, a lack of motor skills, the inability to balance, and impaired spatial skills.

The issues associated with the use of perches in layer hens are mostly keel bone deformity, and risk of fracture if birds do not land successfully when jumping or flying between perches. Perches in furnished cages have been associated with an increased risk of cloacal cannibalism. The issues associated with perches may be addressed by good management, as well as the design and placement of perches. For example, the risk of unsuccessful landings, and therefore bone deformities and fractures, may be reduced by perch type and placement (Scott et al., 1997; Lay et al. 2011). Additionally, since bone strength is a heritable trait, genetic selection programs may be utilised to create strains which are less sensitive to osteoporosis and bone breakages which are suited to cage free environments (Fleming et al. 2006; Widowski et al. 2013).

Rearing without early access to perches causes low muscle strength, a lack of motor skills, the inability to keep balance, and impaired cognitive spatial skills, with long-lasting effects on welfare (EFSA 2015). Therefore, while hens are generally motivated to use perches, and the majority of hens will utilise perches, providing perches during the rearing period can enhance their ability to utilise them in the laying period (EFSA 2015). A recent review by Janczak and Riber (2015) recommends that the rearing system should provide constant access to perches (as well as appropriate substrates and mashed feed). Providing access to perches during rearing enhances perch use throughout the lives of the birds, and also reduces floor eggs (Gunnarsson et al. 1999; Lay et al. 2011).

Perches for meat chickens

Perching improves musculoskeletal health, which is an important consideration for both layer hens and meat chickens. Poultry species including meat chickens suffer leg weakness due to fast growth and high body weights. Simple barrier perches have welfare benefits in meat chickens by reducing the incidence and severity of footpad lesions, without compromising performance (Ventura et al. 2010).

Since resting on elevated structures is a natural behaviour for poultry, an obvious approach to improve the environment and provide effective enrichment for broiler chickens is to offer elevated

structures which allow perching (Riber et al., 2018). The provision of suitable elevated structures generally increases the activity levels of broilers (Bizeray et al., 2002b; Ventura et al., 2012; Bailie et al., 2013; Ohara et al., 2015; Bailie and O'Connell 2015). Studies have found that when broilers are provided with straw bales or low wooden barriers, they increase activity, encourage perching, and provide cover and additional places for resting. Baillie et al. (2013) found that leg health was improved when birds were provided with natural light and straw bales. Straw bales also provide additional pecking stimuli, are readily available, and are easily disposed of (Nicol et al., 2017).

The provision of elevated structures (such as straw bales, platforms with ramp-access, or low barrier-perches) from placement, in combination with an appropriate photoperiod (e.g. 16 hours of light at 20 lux to 8 hours of dark from the second week), should encourage activity and benefit leg health. Studies have found that perch usage improves bone deformation issues and Tibial Dyschondroplasia (disorder affecting the development of the leg bone and cartilage which predisposes birds to fractures, infection, and deformities) (Birgul et al., 2012).

Perches may also promote walking and movement, thereby reducing both the incidence of leg disorders, and improving the quality of litter material to reduce the incidence of contact dermatitis, hock and breast burn (Robins and Phillips, 2011). Barrier perches and vertical panels may also promote a more even distribution throughout the housing facility and can provide more even litter quality, allow birds to escape disturbances, and reduce skin lesions (Nicol et al., 2017). Access to perches is also believed to improve thermoregulation as the birds are able to reduce contact with the heat-emitting litter, and have air flow around their bodies (Riber et al., 2018).

Perch design is extremely important to enable and promote perching. Some studies have found low use of perches, and studies have found a high variation in the rate of perch use (from <2% to 25% of the flock during daytime). However, low use is likely due to the physical challenge or inability rather than lack of motivation to access the elevated position and roost. Low perch use is due to poor design of perches that does not accommodate for broilers' high body weight, weak bones, and body conformation with heavy breasts, and the way in which access to perches is provided appears to be an important factor influencing usage (Riber et al., 2018). When provided with a preferred perch design (15 cm high, horizontal (no angles), wooden design), broilers have been found to spend 10-25% of their time on the perches (Bizeray et al., 2002; Bokkers and Koene, 2003; Ventura et al., 2012; Bailie and O'Connell, 2015), whereas they may barely use perches at all if they are too high (e.g. 25 or 30 cm) or of a non-preferred design (Rodriguez-Aurrekoetxea et al., 2015).

Broilers have been observed to use low perches (10 cm) more than high perches (30 cm) (Norring et al., 2016). Wooden perches appear to be preferred over PVC piping, and the width of elevated structures is important to allow broilers to utilise them (at least 4-5 cm). Platforms should be considered as they may satisfy roosting motivation, a study found that elevated platforms which were accessed by ramps were used much more frequently than perches (Norring et al., 2016).

The design of elevated structures can provide welfare benefits, but their design is very important. Panels and platforms that are easy for birds to use (to get onto and to sit on) may yield important benefits to the birds in terms of their use as a perch, as well as providing places of refuge and aiding in even distribution of birds throughout the shed.

All poultry

Perches affect poultry welfare on many levels; reducing fear, improving motor activity, providing preferred resting locations, and reducing foot pad lesions and muscle and bone problems (Lay et al. 2011). Olsson and Keeling (2002) concluded that perching beneficially affects hen welfare by improving bone strength and decreasing the risk of cannibalism, in addition to the fact that hens have a strong motivation to perch. They recommend that hens should be housed in systems with perches during the rearing and laying periods (Olsson and Keeling, 2002). Preventing hens from perching is likely to cause frustration, and there is a growing trend for poultry welfare standards to require birds be given the opportunity to perch (Fraser et al. 2013).

Panels and platforms that are easy for birds to use (to get onto and to sit on) all birds to roost and perch, enrich the environment, provide places of refuge, and aid in even distribution of birds

throughout the shed. Providing more perching space, whether in the form of platforms or low wide perches that are easily accessible by the birds, enables the benefits of perching to be yielded.

To improve poultry welfare, it is important that standards acknowledge the importance of perching. The inclusion of perches in all housing systems for poultry is relatively straightforward, and has the potential to yield large improvements in welfare.

PROVISION OF NESTS FOR HENS OF ALL SPECIES THAT LAY EGGS

Current draft standard(s)/guideline(s)

Under section B1, Laying Chickens:

SB1.9 A person in charge must provide nest boxes for layer hens in lay in non-caged systems.

GB1.6 Where nests are provided, there should be a sufficient number of appropriately-sized nests for the strain and number of hens in each group.

GB1.7 Hens should be provided with a minimum of one single nest for every 7 birds or $1m^2$ nesting box area for every 120 birds.

GB1.8 Nest boxes should be enclosed and provide a suitable floor substrate to encourage nesting behaviour.

GB1.9 Nest box flooring should not consist of wire or plastic-coated wire.

GB1.10 Nest boxes should be kept clean and operational.

RSPCA recommendation

The RSPCA urgently recommends that the guidelines become standards, and apply to all egg-laying hens for all species in all housing systems (i.e. moved to become a standard under section A4, facilities and equipment for all poultry).

Proposed additional standard

SB1.x There must be a sufficient number of appropriately-sized enclosed nests for the strain, species and number of laying hens (exemption for ratites which should have nesting areas but not necessarily enclosed).

Evidence supporting RSPCA recommendation

Layer hens have a strong motivation to perform 'nest-building' behaviours, which are triggered by hormones at ovulation (Wood-Gush and Gilbert 1973). Prior to egg-laying, hens perform behavioural patterns which include searching for a nest site, nest-building, and sitting on a nest. Nesting is a behavioural priority for hens (Weeks and Nicol 2006; Lay et al. 2011), and is thought to be highly important to their welfare. Indeed, it has been argued that nests are essential for layer hen welfare (Cooper and Albentosa 2003; Weeks and Nicol 2006; Cronin et al. 2012a; Widowski et al. 2013), and there is a growing trend for animal welfare standards to require that hens be allowed to nest (Fraser et al. 2013).

The need for layer hens to perform pre-laying behaviour and utilise a nest has been assessed by motivation tests, which have consistently demonstrated that it is a high priority. In conventional cages where there are no opportunities to perform these pre-laying behaviours, birds have expressed frustration in the form of stereotyped pacing, and the retention of eggs beyond the expected time of lay, resulting in extra calcification of egg shells (Yue and Duncan 2003; Widowski et al. 2013). Repetitive pacing is an indication of frustration in poultry (Yue and Duncan 2003; Lay et al. 2011), and occurs when hens fail to find an enclosed location in which to lay their eggs (Struelens et al. 2008; Lay et al. 2011). Hens also prefer to lay eggs in a moulded nest rather than on a sloping wire floor. The lack of a moulded nest may reduce welfare (Hughes et al. 1989; Lay et al. 2011). In addition to satisfying a behavioural demand, a closed nest area can reduce cloacal cannibalism. If hens lay eggs in open locations, this might incite cloacal cannibalism (Newberry 2004, Lay et al. 2011).

Cronin *et al*. (Cronin et al. 2012a) reviewed the importance of pre-laying behaviour and nest boxes for the welfare of layer hens. It was stated that the majority of hens (at least 70%) will lay in a nest

box if provided, but that the lack of a nest box nor the sudden denial of a nest box have been shown to result in increased physiological stress response, based on corticosterone concentrations in plasma or egg albumen. However, Alm et al. (2016) found that exclusion from nests was associated with an increase in physiological stress measurements (faecal corticosterone metabolites and heterophil:lymphocyte ratios, corticosterone in plasma).

It is important to note that hens which spent more time sitting during the 2 hours prior to egg laying had lower plasma corticosterone concentrations, when sampled 4-5 hours post egg laying, and the hens which had more bouts of sitting, suggesting frequent disturbance, had higher corticosterone concentrations. Therefore, nest boxes may function to provide hens with a location where they are less disturbed before egg laying (i.e. the importance of a nest in providing an uninterrupted place to sit may be beneficial in reducing stress). Further, plasma corticosterone was measured 4-5 hours after egg laying, and was intended to provide a measure of chronic stress, rather than an indication of the associated with not performing nesting behaviours or accessing a nest. There is, in fact, a lack of information on the physiological stress responses of hens when nest boxes are denied (Cronin et al. 2012a).

The Cronin et al. (2012a) review also states that the majority of domesticated, highly selected commercial layer hens prefer to lay their eggs in a discrete enclosed nest box, which is a strong argument for the provision of nest boxes (Appleby et al. 2002; Weeks and Nicol 2006), and that the strength of the motivation to access a nest box has been demonstrated in a number of different ways (Cronin et al. 2012a). In fact, Cooper and Appleby (2003) showed that ISA Brown hens' work-rate to access a nest box 20 minutes prior to egg-laying, was twice the work-rate to access food after 4 hours of confinement without food. Cooper and Appleby (2003) concluded that hens place a higher value on gaining access to a discrete nest-site prior to oviposition than they do on gaining access to food following 4 hours of food deprivation. This was indicated by the amount hens were willing to work by pushing a computer controlled push door for resources (Cooper and Appleby 2003).

The Cronin *et al*. (2012a) review refers to a number of studies which point out the importance of nest boxes for hen welfare. These include:

- Duncan (2001), who stated that the absence of a nest box was perhaps the most serious welfare issue for laying hens,
- Keeling (2004), who argued that a hen would probably have a welfare problem if it could not find an appropriate site for egg laying,
- LayWel (2006), which concluded that hens should be provided with a discrete, enclosed nest site for egg laying,
- Studies which equated reduced welfare and the performance of frustration behaviours such as pacing and vocalisations with the lack of a suitable nest site and the consequent inability to perform nesting behaviour (Zimmerman et al, 2000, Cooper and Albentosa 2003; Weeks and Nicol 2006),
- Weeks and Nicol (2006), who concluded that hens place a high value on access to a discrete and enclosed nest site for egg laying,
- Cooper and Appleby (1995) and Freire et al. (1996), who found that the motivation of hens to access a nest site increases as the time of egg laying approaches,
- Yue and Duncan (2003), who found that hens with access to a nest box spent significantly less time pacing in the hour before egg-laying (7%) compared with hens that had no experience of a nest box (23%), or that had their nest box blocked (20%), and that there was no change as the birds aged, suggesting that they did not adapt to the lack of a nest box.

Red junglefowl, the ancestors of modern day layer hens, typically move away from flock mates to nest, and incubate their clutch in a safe and secluded site. Modern day layer hen strains have been selected to lay high numbers of eggs, and the motivation to sit on the clutch, or brood, has been selected against. However, regardless of the lack of broodiness, hens retain the innate nesting behaviour which is exhibited by their ancestors (Cronin et al. 2012a).

Nesting has been identified as a behavioural priority for layer hens, particularly immediately prior to egg-laying. If denied a nest, birds can become frustrated, pace, and retain their eggs. Worldwide, there is a growing trend for animal welfare standards to require that hens be allowed to nest. New Zealand, Canada, and the European Union all either require hens to be provided with nests, or are bringing in that requirement. Australia needs to follow suit, and ensure that hens can perform fundamental behaviours which they are highly motivated to perform.

PROVISION OF ENVIRONMENTAL ENRICHMENT

Current draft standard(s)/guideline(s)

GA4.5 Provision of environmental enrichment should be considered, taking into account potential risks and benefits to poultry welfare. Such practices may include provision of:

- bales of hay or straw
- perches/barriers
- objects for pecking
- dust-bathing materials
- a radio in sheds to accustom poultry to a range of noises and voices.

RSPCA recommendation

The RSPCA recommends that a standard be introduced in Chapter 4 – facilities and equipment, to ensure that all species are provided with environmental enrichment appropriate to the species, with guidelines on type of enrichment in species-specific chapters.

Evidence supporting RSPCA recommendation

Environmental enrichment is understood as an improvement in the environment which increases the behavioural opportunities of an animal and leads to improvements in biological function. Environmental enrichment for meat chickens often has the aim of increasing general activity levels which can improve the occurrence of leg problems and contact dermatitis, among other benefits. Items which potentially achieve these aims include elevated resting-places, panels, barriers, straw bales, and access to covered outdoor areas (Riber et al., 2018).

Enrichment not only improves welfare, but an environment devoid of enrichment has negative impacts on bird welfare. Rearing in a barren cage environment compared with an aviary system causes long-term impairment of memory and ability to perform a spatial task in chickens (Tahamtani et al., 2015).

The provision of environmental enrichment early in life has the ability to decrease fearfulness. Providing stimulation in the environment through the provision of alternating toys such as balls, plastic bottles and mirrors from placement has been shown to decrease fearfulness (during events such as heat stress, noise and crating) when compared with broilers that were not provided with enrichment (Altan et al., 2013; Nicol et al., 2017; Riber et al., 2018). The notion of a sensitive period for imprinting or the formation of preferences is commonly accepted (Sanotra et al., 1995; Jones et al., 2000), and Huber-Eicher and Sebo (2001) proposed that enrichment provided during the first 2 weeks of life was the most effective.

Jones (1982) also found that providing environmental enrichment in the form of various objects in the first week of age caused increased stimulation and deceased fearfulness in subsequent fear-inducing situations and may therefore enhance the ability of birds to adapt to novelty. When provided with straw bales, studies have found that broilers perch frequently on them, and are more generally active than control birds (Kells et al., 2001; Bailie et al., 2013; Ohara et al., 2015).

LIGHT LEVELS AND PHOTOPERIOD

Current draft standards

SA6.2 A person in charge must ensure that the light intensity for young poultry for the first three days after hatching is at least 20 lux.

SA6.3 A person in charge must ensure that the light intensity for poultry is at least 5 lux on average during light periods.

SA6.4 A person in charge must ensure poultry are not exposed to continuous light or darkness in any 24 hour period except on the day of pick-up (meat chickens) and meat chickens during very hot weather.

SA6.5 A person in charge must ensure poultry except for meat chickens, emus, ostriches and quail are exposed to at least 4 hours of continuous darkness within a 24 hour period.

RSPCA RECOMMENDATION

The RSPCA recommends that the minimum light intensities for all poultry be increased, that for the first week after hatching the average light intensity at bird head height must be at least 20 lux, and after the first week of age that the light intensity must be at least 10 lux. In section B2 for meat chickens and turkeys, light intensity must be at least 20 lux at all times.

While there is a minimum dark period stipulated for all species, this is an exception for meat chickens, emus, ostriches and quail in the standards. This is unacceptable, as a period of darkness is a natural requirement for all animals.

Proposed revised standard

SA6.2 A person in charge must ensure that the light intensity for young poultry for the first week after hatching is at least 20 lux.

SA6.3 A person in charge must ensure that the light intensity for poultry is at least 10 lux during light periods. Lux may be reduced temporarily in the event of a feather-pecking outbreak which negatively affects poultry welfare.

SB2.x A person in charge must ensure that the light intensity is at least 20 lux during light periods.

SB12.x A person in charge must ensure that the light intensity is at least 20 lux during light periods.

SA6.5 A person in charge must ensure all poultry are exposed to at least 8 hours of continuous darkness within every 24 period.

An exception to SA6.5 may be chicks within the first days of placement or requirements for catching, but all poultry must have a continuous dark period.

Evidence supporTing RSPCA recommendation

Light intensities

Brighter light has been found to increase activity levels in broilers during the light period and resting behaviour during the dark period (Blatchford et al., 2012). Higher light intensities also improve gait scores and foot pad condition (Deep et al., 2013). Conversely, low light intensities have been shown to reduce activity levels, and increase lameness in poultry (Prayitno et al. 1997; Robins and Phillips,

2011). Low activity can cause extreme levels of sitting, which can contribute to skin problems such as breast blisters, foot pad dermatitis and hock burn (Jong et al. 2012). Brighter light has found to increase activity levels during the light period and resting behaviour during the dark period (Blatchford et al., 2012), as well as improve gait scores and foot pad condition in broilers (Deep et al., 2013). Low activity can cause extreme levels of sitting, which can contribute to skin problems such as breast blisters, foot pad dermatitis and hock burn (Jong et al. 2012).

Light intensity also affects eye health, with dim (5 lux or less) lighting impairing vision (Blatchford et al. 2009; Deep et al. 2010; EFSA 2010). When active, broilers prefer more brightly lit areas, and more dimly lit areas when inactive (Davis et al. 1999; Jong et al. 2012). Broilers have also expressed a preference for higher light intensities (20 lux) in contrast to dim light (0.05 lx) (Berk 1997, Deep et al. 2012).

Light intensities of 5 lux may reduce preening and foraging behaviours, and increase resting (Jong et al. 2012). In addition, a light intensity above 5 lux may be necessary to allow adequate inspection of birds by farmers (Australian light level standards). When compared with 10 lux, Classen et al. (2012) found that low light intensities of less than 5 lux reduced growth, feed intake, and breast meat yield. There were also increased foot pad lesions and eye size which may be interpreted as negative welfare consequences of light intensities less than 5 lux.

Most previous studies as well as official recommendations recommend 20 lux as a minimum light intensity for the welfare of broiler chickens (Kristensen 2008). In the European Union, Directive 2007/43/CE requires that meat chickens during rearing have a light intensity of at least 20 lux during the lighting periods, measured at bird eye level and illuminating at least 80% of the useable area. Brighter light is often provided in the first week of life to stimulate feeding.

When comparing layer hen behaviour in 3 versus 30 lux, it was suggested that lower light intensities may impair the ability for birds to identify environmental cues due to a higher rate of gentle feather-pecking in low light intensities (Kjaer and Vestergaard 1999; Janczak and Riber 2015).

Meat chickens require adequate lighting to encourage locomotion and activity levels, which contribute to better leg strength, and a lower incidence of lameness and skin problems such as hock burn, breast blisters, and foot pad dermatitis, all of which can occur at high levels in commercial meat chicken production and represent significant welfare concerns in the industry.

There is ample scientific evidence which demonstrates that a minimum average lux of 5 is insufficient for poultry welfare, particularly in species such as meat chickens which require adequate lighting to encourage locomotion and improved activity levels, which contribute to better leg strength, and a lower incidence of lameness and skin problems such as hock burn, breast blisters, and foot pad dermatitis, all of which can occur at high levels in commercial meat chicken production and represent significant welfare concerns in the industry.

Dark period

Manipulation of the photoperiod has important effects on broiler welfare by modulating various physiological and behavioural pathways. A day length of 16 hours has been associated with welfare benefits including lower physiological stress, improved immune response, increased sleep, increased general activity levels, and improved bone and leg health (Gordon, 1994; Davis et al., 1997; Rozenboim et al., 1999). Lighting schedules incorporating adequate dark periods also reduce growth-related mortality including sudden death syndrome (Classen et al., 1991), and improve productivity (Riddell and Classen, 1992). A period of 16 hours of light and 8 hours of dark appears to be appropriate to maximise broiler welfare (Nicol et al., 2017).

A photoperiod with a longer continuous dark period appears to have beneficial effects on fearfulness, walking ability and lameness. An 8 hour dark period generally appears to cause lower levels of fear (Nicol et al., 2017), and reduced lameness (Sanotra et al., 2002; Schwean-Lardner et al., 2013; Das and Lacin, 2014). These associations, as well as associations between day length and foot pad dermatitis and mortality due to poor leg health, have also been found in large commercial field studies (Knowles et al., 2008; Bassler et al., 2013; Schwean-Lardner et al., 2013). Longer dark periods improve leg bone quality (Brickett et al., 2007; Lewis et al., 2009).

Lighting programs are important for good performance and welfare. Programs may be designed to prevent excessive growth, particularly between 7 and 21 days to reduce mortality due to ascites, sudden death, and leg problems. The COBB 500 handbook states that research indicates that broilers should receive 6 hours of continuous darkness per 24 hour period in order to improve the development of the immune system (COBB 500 handbook). Indeed, the handbook recommends three programs based on the weight of the birds, which include 6, 9, and 12 hour dark periods. The Ross 308 Handbook recommends that failure to provide adequate periods of darkness (4-6 hours) can result in abnormal behaviours due to sleep deprivation, suboptimal performance, and reduced bird welfare (Ross 308 Broiler Handbook 2014).

The provision of an appropriate photoperiod (for example 16 hours of light with 8 hours of dark from the second week in combination with elevated structures (such as straw bales, platforms with ramp-access, or low barrier-perches) from placement, should encourage activity, improve leg health, and significantly improve broiler welfare (Nicol et al., 2017).

Chicks

Sanotra (2002) increased the dark period from day 4 of age (to either 1 hour darkness and decreasing the light period every day, or to 8 hours darkness on day 4 depending on treatment) and found significant improvements in reduced risk of developing tibial dyschondroplasia, increases in general activity levels, and a reduction in fear. They concluded that light-dark schedules improve the welfare and health of broiler chicks even in commercial settings.

The COBB Broiler Management Guide (2013) includes three proposed lighting programs which all include an hour of darkness at day 1 of age, and then increases when the birds are at 100-160 grams to 6, 9, or 12 hours of darkness. The guide specifies that a period of darkness is a natural requirement for all animals, and includes the following benefits of lighting programs:

- Energy is conserved during resting, leading to an improvement in feed conversion
- Mortality is reduced, and skeletal defects are reduced
- The light/dark period increases melatonin production, which is important in immune system development
- Bird uniformity is improved
- Growth rate can be equal to or better than that of birds reared on continuous light when compensatory gain is attained.

In addition to the benefits outlined above, the proposed change to lighting programs in terms of minimum dark periods from 1 to 2 hours between days 4 and 7 allows a more gradual transition to the longer dark period prescribed post 7 days of age.

LITTER AND DUSTBATHS FOR ALL POULTRY

Current draft standard(s)/guideline(s)

There is currently no standard requiring that poultry be provided with litter.

RSPCA recommendation

The RSPCA recommends that a standard be included in the draft standards and guidelines document, under section A8, Litter management, to ensure that all poultry housed indoors are provided with access to litter.

Proposed new standard

SA8.x All birds housed indoors must have access to a littered area, the litter occupying at least one third of the ground surface in order for birds to forage and dustbathe.

Evidence supporting RSPCA recommendation

Litter is an important element of the birds' environment. Some studies have found that birds will work for litter (Widowski and Duncan, 2000), and even enter smaller cages in order to access litter, indicating that it is a high priority. Litter is preferred over wire mesh by birds, and is necessary for the normal expression of some innate behaviours (Dawkins, 1981).

Dustbathing is a fundamental behaviour that poultry perform, and which is prevented in conventional cages (Widowski and Duncan 2000). Functionally, dustbathing is performed to clean the feathers and remove stale lipids (Lay et al. 2011). It acts to remove skin parasites, regulate the amount of feather lipids, and to maintain plumage condition (Olsson and Keeling 2005). Plumage lipid concentration is much higher in hens housed on wire compared to those with access to litter (Scholz et al. 2014).

Dustbathing is strongly affected by the presence of litter, as well as litter quality, and normal patterns of dustbathing behaviour are disturbed in cages. Studies have found that hens are willing to work to obtain a dustbathing substrate, and after deprivation of dustbathing are more motivated to dustbathe. It is suggested that welfare is improved when hens are able to dustbathe (Widowski and Duncan, 2000).

Conventional cages have no provisions for dustbathing. Sham-dustbathing can occur, where hens perform dustbathing movements which would normally include scooping dust into the plumage. However, the dustbathing sequence is unable to be completed, as there is no substrate, nor shaking off of lipid-saturated dust. Sham dustbathing lacks positive feedback (Widowski and Duncan, 2000), does not satisfy birds' motivation for dustbathing (Olsson and Keeling 2005), and may indicate a reduced state of welfare (Lay et al. 2011). Further, when birds are unable to dustbathe, plumage is in a poorer condition as it is dirtier, less waterproof, and less insulative (Scholz et al. 2014).

Furnished cages have some provisions for behaviours including foraging, dustbathing, nesting, and perching (Appleby et al. 2002; Lay et al. 2011). The extent to which these behaviours are accommodated in furnished cages is variable, and litter for dustbathing and foraging is often quickly depleted. Subordinate hens may also be excluded from the litter area by more dominant hens (Shimmura et al. 2008). Restricted access to litter, and the small amounts of litter provided can cause stress (Lay et al. 2011).

Foraging is an important part of the normal behavioural repertoire of hens (LayWel 2006), and when litter is available, it is used extensively by hens for scratching and pecking (Ekesbo 2011). Studies have found that hens spend the majority of their time ground-pecking and ground-scratching if litter is available (Hartcher et al. 2015). Further, poultry species perform foraging behaviours even when feed is provided *ad libitum* in feed troughs. This is known as 'contra-freeloading' (Widowski et al. 2013) and demonstrates that hens have an innate behavioural motivation to forage for food. This behaviour is not satisfied in conventional cages, and is only partially accommodated in furnished cages, where substrate may be insufficient, or quickly depleted (Lay et al. 2011). Environmental

complexity is severely limited in both conventional and furnished cage systems. This limits hens' ability to explore their environment, and forage (LayWel 2006).

Ideally, material for dustbathing and for foraging should be separate. For dustbathing, birds prefer material such as dirt or sand. For foraging, substrates such as straw or wood shavings are appropriate.

Poultry are motivated to dustbathe and forage, and access to litter is important to their welfare, to maintain good plumage condition, improve the feeling of satisfaction, and potentially reduce adverse behaviours such as feather-pecking. In order to ensure good welfare, all poultry must have appropriate access to litter.

BEAK-TRIMMING AND BILL-TRIMMING

Current draft standard(s)/guideline(s)

SA9.14 A person must use appropriate tools and methods to trim beaks of poultry.

SA9.15 A person must not remove more than one-third of the upper or lower beaks.

GA9.12 New, more humane technologies and methods for performing physical alterations should be adopted as they become available.

GA9.13 Beak trimming, when undertaken, should be done using an infrared beam within 3 days of hatching.

GA9.14 If therapeutic beak trimming is required, it should be carried out by trained and skilled personnel at as early an age as possible and care should be taken to remove the minimum amount of beak necessary using a method which minimises pain and controls bleeding.

GA9.15 Alternative strategies for managing injurious (feather) pecking that minimise the need for beak trimming should be employed e.g. use and availability of different foraging resources.

RSPCA recommendation

SA9.x Beak trimming must only be performed where all other options to reduce feather pecking and cannibalism have been implemented.

SA9.x Beak trimming must only be performed by an accredited beak-trimming operator.

SA9.x Beak trimming must only be performed using appropriate tools and methods that minimise pain and control bleeding.

SA9.x Beak trimming must only be performed on chicks within 3 days of hatching.

SA9.x A person must not remove more than the tip of the beak (one fifth of the beak).

SA9.x A second beak trim must not be performed, unless necessitated by the incidence of severe feather pecking throughout the flock which negatively impacts on poultry welfare.

Evidence supporting RSPCA recommendation

The RSPCA would like to see an end to beak trimming as a routine procedure to manage the risk of a feather-pecking outbreak. It is acknowledged that feather pecking is particularly difficult to control due to its multi-factorial nature and is a significant welfare problem where it does occur. However, beak trimming is acutely painful. Beak trimming stimulates nociceptors in the beak which leads to acute pain during the procedure (Breward and Molony, 1984, Breward and Gentle, 1985, Glatz, 1987) including during infrared trimming (Marchant-Forde et al., 2008, Janczak and Riber, 2015), chronic pain in the stump of the beak if performed on older birds due to the formation of neuromas (Breward and Gentle, 1985, Gentle, 1986, Gentle et al., 1990, Gentle, 2011), and a reduction in feed intake (Glatz, 1987).

Beak trimming also likely results in incomplete sensory feedback affecting sensory perception (Hughes and Michie, 1982). It can cause problems in younger birds, due to the rapid growth and the small size of the beaks; if too much of the beak is removed during trimming it may lead to feeding problems and an increase in mortality. If too little is removed, the beak can re-grow rapidly, and the effectiveness in minimising severe feather pecking is reduced.

A ban on beak trimming currently exists in countries such as Norway, Sweden and Finland, with heavy regulation and impending bans in others, including Austria, Belgium, Denmark, Germany, the Netherlands, and the UK (Van Horne and Achterbosch, 2008, Petek and Mckinstry, 2010). The RSPCA

does not propose banning beak-trimming until there are viable alternatives available to control feather pecking and cannibalism. However, there is little standardisation in beak trimming across the country, despite the fact that it was identified over 15 years ago that there is a need for beak-trimming accreditation (SCARM report 2000). There is also a large body of scientific literature on the cause of feather pecking and potential control strategies. Further, management packages have been developed which should be utilised across the industry.

Much more attention needs to be given across the industry to implementing alternative strategies for managing feather pecking that minimise the need for beak trimming. These include the provision of appropriate environmental enrichment, good litter management, appropriate stocking densities, appropriate diet formulation and form, reducing stress and fearfulness, selecting strains of birds with lower propensities to perform feather pecking, matching the rearing and laying environments as closely as possible, providing environmental complexity and the ability for birds to escape aggressors, and proactive monitoring, regular feather-scoring, and early interventions by investigating management strategies and all of the aforementioned factors as soon as any signs of feather-pecking are observed. Management and stockpersonship are crucial in controlling feather-pecking. There is much information available on feather-pecking prevention strategies at www.featherwel.org.

MULTIPLE PICK-UPS

Current draft standard(s)/guideline(s)

There are currently no standards on pick-ups.

RSPCA recommendation

The RSPCA recommends that standards be introduced to chapter 9 – handling and husbandry to place limits on the number of times that pick-ups may be performed per batch.

Evidence supporting RSPCA recommendation

Pick-ups, where a portion of the birds is removed prior to final depopulation, or 'thinning', is a common practice and may be performed due to a market demand for lighter birds, and to maintain the stocking density within the maximum limits. This practice enables more birds to be housed per batch within the maximum stocking density. Pick-ups negatively affects broiler welfare in multiple ways, which can be broadly broken down into three categories:

1) Stress – The presence of multiple unfamiliar people and equipment in the shed, unfamiliar noises, the removal of feed and water and environmental enrichment, birds being walked over and lesions inflicted, the disruption in the birds' normal routines, and the action of catching is very stress-inducing for the birds being caught as well as uncaught birds in the shed (Nicol et al., 2017).

2) Health risk – Multiple pick-ups represent a very high risk of introducing infectious diseases to the shed. The spread of disease or microbial contamination from one farm to another can happen readily through the movement of people, vehicles and equipment, for example transport crates (Australian Government Department of Agriculture, Fisheries and Forestry, 2010). Major routes for disease and pathogen transmission include people (contractors, visitors where diseases may be transmitted by hands, boots, clothing), equipment and vehicles (Australian Chicken Meat Federation, 2009). The handling during catching can also cause injuries to the birds in the form of bruising or fractures.

3) Higher stocking densities for a longer period of time over the lives of the birds – The greater the number of times that a portion of birds is removed from the shed (the more pick-ups), the greater the period of time birds within a shed may be exposed to maximum stocking densities. The birds that remain in the shed until final depopulation may have been exposed to maximum stocking densities, and the associated negative welfare implications, several times over their lives (as many times as pick-ups were conducted).

   Lower stocking densities are associated with lower rates of foot pad, hock and breast dermatitis, reduced lameness, and a lower incidence of heat stress. Limits on stocking densities (coupled with appropriate environmental conditions, good management, and animal-based measures of welfare indicators) are important in improving animal welfare (Nicol et al., 2017).

STUNNING, SLAUGHTER AND ON-FARM KILLING

Current draft standard(s)/guideline(s)

Chapter 10 – Humane killing
Chapter 11 - Poultry at slaughtering establishments.

RSPCA recommendation

More standards and specifications are required in this section to minimise the extreme risks to poultry welfare during stunning, slaughter and on-farm killing.

More requirements are needed in chapter 11 – poultry at slaughtering establishments to ensure welfare at abattoirs, and to prevent failures. This includes specifications for electrical waterbath (electrical current frequency, checking for consciousness etc.) and controlled atmosphere stunning systems, a requirement for CCTV cameras in all abattoirs, and designated animal welfare officers in all abattoirs.

More requirements are also needed in chapter 10 – humane killing to include unacceptable methods for on-farm killing.

Evidence supporting RSPCA recommendation

There is a great risk of compromising bird welfare at killing by stress, pain and suffering. The risk may be minimised through the use of appropriate equipment, staff training, and the development of appropriate procedures (Nicol et al., 2017).

There are a number of methods of stunning prior to slaughter, including electrical stunning, controlled atmosphere stunning and low atmospheric pressure stunning. Regardless of the stunning and killing method, important parameters that affect bird welfare are the period of time that unconsciousness persists (and the time between stun and cutting), and the birds should be monitored to ensure that unconsciousness persists (Nicol et al., 2017).

Below are some examples of the many serious welfare risks which may be present at stunning, slaughter and on-farm killing if the correct requirements are not in place. There are many forms of stunning and slaughter, as well as on-farm killing, and there are many facets of each one which may expose birds to risks of extreme suffering and should therefore be included in the standards.

Electrical stunning poses extreme risks to bird welfare if the correct parameters are not specified. If the current is applied at the wrong frequency, it can paralyse the bird or cause cardiac fibrillation without actually inducing unconsciousness (Raj and O'Callaghan, 2004). This has the result of the bird appearing to be stunned and results in severe pain and distress. Electrical parameters should therefore be set to ensure immediate loss of consciousness, as well as the length of time that birds are in contact with the current (Nicol et al., 2017). Breast comforters should be used to reduce the risk of birds lifting their heads and missing the waterbath, and the shackle should be wet to reduce electrical resistance and improve the efficiency of the stun (EFSA, 2004).

Additional welfare risks associated with electrical waterbath stunning include the removal of birds from transport crates at high speed, suspension from shackles, pre-stun shocks, variability between birds in electrical current and settings and risk of birds lifting their heads and not being properly stunned (Nicol et al., 2017). The European Food Safety Authority (2012) recommends that regulatory requirements should include minimum current for each bird, frequency and current type as well as the wave characteristics duty cycle and waveform. Further, they recommend improved surveillance and monitoring of electrical parameters used in abattoirs and methods that allow accurate measurement of electrical current flowing through each bird (EFSA, 2012).

With gas stunning some of the welfare risks of electrical stunning can be avoided (e.g. removal from transport crates while conscious and shackling), but the duration of unconsciousness is dependent on the gas composition and duration of exposure to the gas mixture (EFSA, 2004). Carbon dioxide gas may also be aversive to poultry and cause an unpleasant sensation at high concentrations (Raj, 1996; 2006).

Following stunning, the carotid arteries in the neck are severed and bleed out must persist for an appropriate length of time to ensure that the bird is dead before entering the scalding tank. If appropriate parameters are not set for stunning and the birds are not stunned properly, those birds could have their throats cut when they are conscious. Following this, if the neck cutting does not effectively sever both carotid arteries in the neck and there is no requirement to check the birds before they enter the scalding tank, birds may enter the scalding tank conscious (EFSA, 2004).

On-farm killing

Manual cervical dislocation, one method of killing individual birds, is performed by stretching and dorsally twisting the neck upwards, causes separation of the spinal cord and brain stem, reduces the diameter of the carotid arteries, and causes death by cerebral ischemia (insufficient blood flow to the brain) if performed correctly. Since loss of consciousness is not immediate, there are welfare concerns around cervical dislocation (EFSA, 2004; Sparrey et al., 2014).

Mechanical neck crushing with the use of an instrument does not sever the carotid arteries and does not reduce their diameter. Therefore, if the spinal cord is severed by crushing but the blood supply is not stopped, death results from asphyxia (suffocation) rather than ischaemia. The time to death is therefore longer with crushing methods than stretching methods of cervical dislocation (EFSA, 2004; Sparrey et al., 2014; Martin et al., 2016). Thus, methods which involve instruments that may cause a crushing effect should not be used.

Captive bolt devices or non-aversive gases may be alternatives for on-farm euthanasia, where appropriate equipment is developed and maintained effectively. Advantages of gas killing include that there is less handling, and if non-aversive gases are used, they may not induce a sense of breathlessness or represent the same welfare concerns that manual methods including cervical dislocation do (EFSA, 2004). Low atmospheric pressure stunning (LAPS) may also be a higher welfare option in future, particularly for slaughter (EFSA, 2017). An advantage of captive bolt devices is that appropriately designed, maintained and executed penetrating and non-penetrating captive bolt devices cause severe structural damage to the brain and cause immediate death in poultry (EFSA, 2004).

There should also be protocols in place for mass killing on-farm to protect bird welfare. Methods that can cause suffering such as ventilation shut down or removal of feed and water should not be used.

SPACE - LOWER STOCKING DENSITIES

Current draft standard(s)/guideline(s)

There are currently several standards and guidelines proposing maximum stocking densities for each species.

RSPCA recommendation

The RSPCA recommends that the maximum stocking densities be decreased for all species.

Proposed revised standards(s)/guideline(s)

For meat chickens, the maximum stocking density should not exceed:

a. 28kg per m^2 for natural ventilation systems

b. 34kg per m^2 for tunnel ventilation systems.

For layer pullets, the maximum stocking density should not exceed 26kg/m^2 at 16 weeks of age.

For layer hens, the maximum stocking density should not exceed:

a. 7 birds/m^2 of the usable area for floor-based systems

b. 9 birds/m^2 of the usable area for tiered systems.

For turkeys, the maximum stocking density should not exceed:

a. 28kg per m^2 of available floor area for natural ventilation systems
b. 30kg per m^2 of available floor area for mechanical ventilation systems, where bird liveweight at catching is 5kg or less
c. 35kg per m^2 of available floor area for mechanical ventilation systems, where bird liveweight at catching is greater than 5kg.

Evidence supporting RSPCA recommendation

Stocking density has a direct, linear relationship with welfare parameters. At high densities, there is less opportunity for birds to perform natural behaviours such as wing-flapping. Locomotion and environmental exploration are also inhibited, and activity levels are reduced, all of which predispose birds to contact dermatitis, and reduced leg strength (Andrews et al. 1997; Buijs et al. 2009). Leg strength can decrease with increased stocking densities, while hock dermatitis, foot pad dermatitis and fearfulness can all increase with increasing stocking densities (Buijs et al. 2009). Many studies have reported a correlation between foot pad dermatitis severity and stocking density (Nicol et al., 2017). Studies have found birds at high stocking densities have worse foot pad burn and gait scores compared to lower stocking densities. Increased stocking densities also have a negative effect on tibia curvature which can cause lameness, bruised hocks, dislocation in the hock joint, and fractures (Bradshaw et al. 2002; Buijs et al. 2012).

Chickens have demonstrated preferences for stocking densities below 40kg/m^2 (Buijs et al. 2011), and feed conversion, bodyweight gain, digestive microbiota, and litter quality have been found to be negatively affected when meat chickens were reared at 17 birds per m^2 compared to 12 m^2 (Guardia et al. 2011).

Feeding behaviour is negatively associated with increasing stocking density, and heat stress can be avoided by reducing stocking density. Stocking densities of less than 33 kg/m^2 are associated with reduced lameness, heat stress and contact dermatitis. Lower limits on stocking density with targets for animal-based measures of lameness and contact dermatitis are important for good animal welfare outcomes (Nicol et al. 2017).

A study comparing 34kg/m^2 with 40kg/m^2 in commercial conditions found that at the higher stocking density, daily mortality was greater, leg problems, contact dermatitis and carcass bruising increased, resting behaviour was increasingly disturbed, locomotion and ground pecking decreased, and lying and preening patterns were affected (Hall 2001). A study found that the highest stocking density studied, 30 birds/m^2, caused acute stress in female broilers (Villagra et al. 2009).

There is ample evidence which shows that higher stocking densities compromise poultry welfare. Therefore, lower stocking densities must be set for all poultry species in the standards, with stocking densities for some species recommended above.

SLOWER GROWTH RATES

Current draft standards

There are no standards or guidelines placing limits on growth rates.

RSPCA recommendation

The RSPCA recommends that standards, and at the very least guidelines, be introduced to place limits on the growth rate of meat chickens in section B2.

Evidence supporting RSPCA recommendation

Over the last 50 years broilers have been subjected to intense genetic selection for increased growth rate and body mass; growth rates having risen by over 300%, from 25 to 100 g per day. Selection for fast growth has led to significant physical differences with associated welfare problems. Fast-growing broilers generally reach slaughter weight in 32-40 days of age, slower-growing broilers may reach slaughter age in 70 days of age (Nicol et al., 2017).

The fast growth rate of commercial meat chickens can lead to significant physical and metabolic disorders including leg problems, ascites and sudden death syndrome. This should be actively addressed in the standards and guidelines, as the relevant regulation.

Fast-growing chickens have a higher feed intake and metabolic rate, and a higher demand for oxygen. This can lead to physiological challenges such as problems regulating oxygen supply to heart tissue. They can therefore suffer higher mortality rates (Nicol et al., 2017). Lameness is also associated with heavy, fast-growing broilers. The rate of growth is a risk factor in lameness and poor leg health due to abnormally high loads being placed on immature bones and joints. Slower-growing genotypes have lower rates of lameness on the same feed. Bone health is also better in slower-growing strains (no more than 50g of weight gain per day such as Label Rouge, Cornish Rock and Cobb Sasso compared with fast-growing broilers Ross 308 and Cobb 500) (Nicol et al., 2017).

Lameness causes the inability to access resources, limited behavioural expression and pain. It is therefore a serious welfare concern (Nicol et al., 2017). Fast-growing broilers have a higher incidence of leg problems than slower-growing chickens, are more prone to tibial dyschondroplasia (Shim et al., 2012) and other skeletal defects (Havenstein et al., 1994), tendon degeneration, scoliosis, deviated breastbones, rotated tibias (Bokkers and Koene, 2003), leg weakness, lameness (Bassler, 2005; Bestman and Maurer, 2006), mortality (Castellini et al., 2002), ascites and sudden death syndrome, heart abnormalities (Bokkers and Koene, 2003; Gardiner et al., 1988; Olkowski et al., 2008**)** and muscle damage due to the rapid growth rate (European Commission, 2000). Fast-growing chickens also scratch, perch, and walk less than slower-growing lines. Multi-trait selection by reducing the growth rate could meet production goals and improve welfare (Dawkins and Layton, 2012).

Slower growth rates would improve welfare of broilers grown for meat by reducing rates of metabolic and leg problems, and also improve welfare of breeder birds by reducing the reliance on feed restriction to slow growth, and the associated negative welfare.

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SECTION 3 - COMMENTS ON SPECIFIC SECTIONS AND STANDARDS

Throughout this section of the submission:

- *Italics font* indicates text which has been taken from the standards and guidelines document.
- **Bold font** indicates RSPCA input.

INTRODUCTION

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*The **standards** provide the basis for developing and implementing consistent legislation and enforcement across Australia, and direction for people responsible for poultry. They reflect available scientific knowledge, current practice and community expectations.*

The RSPCA believes that this statement is untrue. While the Model Code of Practice was set based on industry practice over a decade ago, the draft standards do not include anything new, nor do they offer any meaningful improvements over the Model Code of Practice. There is a plethora of scientific studies which have been conducted and published over the last decade, none of which appears to be drawn on in the current standards. It is also highly dubious to suggest these standards reflect community expectations. No focused social science research has been conducted contrary to recommendations made in the PWC review. Opinion polls have consistently shown the community is opposed to the use of barren cages in egg production and many other practices outlined in the standards would fail to meet community expectations.

Standards are underpinned by science based on references identified through a review of relevant scientific literature, a process that helps to ensure that the standards are scientifically valid.

'Scientifically valid' means peer-reviewed and published in a reputable journal. It is essential that the scientific reviews which are conducted to inform this process are independent, and published. This should be done prior to the standards review taking place, and provided to all stakeholder advisory group members prior to the first SAG meeting. The supporting documents do not suffice as reviews of scientific literature. The supporting document for cages for example, heavily relies on an AECL industry report, and an unpublished review commissioned by industry, as references throughout the document.

The 'risk to welfare of poultry' is the potential for a factor to affect the welfare of poultry in a way that causes pain, injury or distress to poultry. The outcome could include hypothermia, heat stress, dehydration, exhaustion, injury, disease or death. Risks can be managed by undertaking 'reasonable actions' to prevent or reduce them.

There should be more emphasis on positive welfare states rather than the absence of negative welfare states. There is a need for existing welfare assessment frameworks to accommodate the shift in focus to emphasise the experience of positive states (Mellor and Beausoleil, 2015).

The following change is recommended:

A 'reasonable action(s)' are those actions regarded as reasonable to be done by an experienced **and competent** *person in the circumstances to address a problem* **with due regard to animal welfare**,

as determined by accepted practice and by other similarly experienced **and competent** *people. It is not intended that all reasonable actions are described in this document.*

The following addition is recommended:

- handling facilities, equipment and procedures that minimise stress to the poultry **including provision of appropriate environmental enrichment to provide stimulation and allow behaviours including ground-scratching, perching, dustbathing, and nesting**

1 RESPONSIBILITIES

SA1.1 A person must take reasonable actions to ensure the welfare of poultry under their care **including but not limited to the prevention of hypothermia, heat stress, dehydration, starvation, exhaustion, injury, pain, or disease.**

The RSPCA recommends that the above bolded wording be included in the standard.

SA1.x All new staff responsible for poultry welfare must be appropriately inducted and trained. Documentary evidence of staff training and/or competence must be maintained.

The above new standard should be included.

2 FEED AND WATER

SA2.2 A person in charge must ensure poultry, other than newly hatched poultry ~~or where skip-a-day feeding is acceptable (for broiler breeders)~~ have access to food at least once in each 24 hour period.

Skip-a-day feeding is very poor practice and poses welfare risks to poultry as they experience hunger and frustration, and may be accompanied by a lack of water and this can lead to adverse behaviours such as severe feather-pecking, leading to low lighting.

As indicated with strikethrough font above, the RSPCA recommends that skip-a-day feeding is not allowed in the standards as it is stress-inducing and leads to poor welfare.

Further, poultry should all have continuous access to water in their housing facilities.

SA2.6 A person in charge must ensure poultry except for emus and ostriches over 4 days old are not deprived of feed for more than 12 hours prior to depopulation or pick up.

The above standard has been changed from what was in an earlier draft: 'A person in charge must ensure poultry over four days old have reasonable access to food within the 12 hours prior to depopulation or pick up.'

This standard should specify that poultry must also have access to water in this time period. Also there is no evidence that emus and ostriches should be deprived of feed for over 12 hours prior to depopulation or pick-up and this exemption should be removed from the standard.

The following standard has been deleted from an earlier draft:

SA2.8 A person in charge must ensure poultry have access to at least two drinking points.

The RSPCA recommends that the standard be included.

In an earlier draft the following guideline was included, but has now been deleted in the draft standards:

GA2.4 Poultry that cannot access feed and water adequately should be removed daily and raised separately or killed humanely.

In the earlier draft, the RSPCA recommended that the guideline was included as a standard rather than a guideline due to the fact it is relevant to all species in all types of production, and the ability to access feed and water is a basic need and is enforceable.

GA2.7 Unless being used to induce moulting major changes in diet should be introduced over an appropriate length of time and be closely monitored.

The above standard has been changed from: GA2.8 Major changes in diet should be introduced over an appropriate length of time and the effects on birds be closely monitored.

It is unacceptable to include reference to induced moulting. Moulting should not be induced for welfare reasons and the prevention of basic needs of access to adequate and appropriate feed and water. Further, even if induced moulting is performed, major changes in diet should certainly be introduced over an appropriate length of time and be closely monitored at all times.

The following standard has been deleted from an earlier draft:

GA2.11 Feed and watering facilities should be well spaced throughout the housing area.

We recommend it be included to facilitate access to feed and water.

The following guideline has been deleted from an earlier draft:

GA2.13 Water should be available continuously, except where water is withheld prior to water vaccination or medication.

We recommended that, as a basic need, the guideline be moved to a standard. Not only has this not occurred, but the guideline has been deleted.

The RSPCA recommends that the deleted standard be re-introduced as a standard, with exceptions where necessary (i.e. during transport, prior to water vaccination).

It has been raised that continuous access to water would be difficult to regulate, especially as there are some instances where birds (broiler breeders) are regularly denied access to water for long periods of time. Continuous access to water is fundamental to good animal welfare and husbandry, and is in the OIE Terrestrial Animal Health Code for Animal Welfare And Broiler Chicken Production Systems, Chapter 7.10, where it recommends that 'Water should be available continuously.'

Water should be available continuously in these poultry standards and guidelines, with the appropriate exemptions, where continuous access to water may compromise welfare, or be required for medication etc.

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3 RISK MANAGEMENT OF EXTREME WEATHER, NATURAL DISASTERS, DISEASE, INJURY AND PREDATION

The RSPCA recommends the addition of the following bolded words to the below draft standard.

SA3.2 A person in charge must ensure the inspection of poultry **at least** *daily* **(and more frequently in hot weather)**, *at a level appropriate to the management system and the risk to the welfare of poultry.*

The RSPCA recommends the addition of the following bolded words to the below draft standard.

SA3.3 A person in charge must ensure appropriate **treatment or humane euthanasia** ~~*action*~~ *for sick, injured or diseased poultry as soon as possible.*

The RSPCA also strongly recommends that unacceptable methods be included in the standards. This includes mass killing by ventilation shut down, improper cervical dislocation methods, crushing the neck, and any methods which include a risk of smothering.

The RSPCA recommends the following standards be included:

SA3.6 A person in charge must ensure poultry are not handled when showing signs of heat stress (e.g. panting, wings outstretched) unless it is deemed necessary to ensure their welfare.

SA3.7 Poultry with a propensity to feather-peck (layer hens, turkeys, meat chicken breeders, ducks) must be monitored daily for signs of injurious pecking, and appropriate management carried out.

SA3.8 Poultry must be vaccinated to protect against likely infectious diseases if there is a significant risk to the welfare of poultry.

SA3.9 Species particularly prone to leg problems (broilers, turkeys) must be monitored daily for incidence of lameness.

The RSPCA recommends that the below guideline become a standard. Veterinary preventative care and treatment should be mandatory. The birds should be under some overall veterinary control.

GA3.12 Appropriate veterinary advice on poultry disease diagnosis, prevention or treatment should be sought as required.

The RSPCA recommends the following dot point be revised, as feather damage and feather loss can occur anywhere on the body due to severe feather pecking. It most commonly occurs on the back, rump and tail regions in commercial conditions.

GA3.16 Daily monitoring of poultry should occur to identify early signs of injurious pecking which may include:

- feather damage or bare areas around the tail

Be revised to:

- **any feather damage or bare areas, particularly around the back and tail regions**

We recommend the below revision:

GA3.17 Feather pecking and cannibalism risk should be managed. Management methods, such as the below may be considered:

- isolation **and/or treatment** of affected birds.

We also recommend the following: Wounded birds should be treated, separated from the flock for recovery, or humanely euthanased. This decision must be made by a competent and experienced person.

Injurious pecking can escalate extremely quickly and spread throughout a flock very quickly, and if there are birds which have visible wounds, this can escalate into cannibalism rapidly. These birds should therefore be separated from the flock and treated as soon as possible.

RSPCA recommends the following addition:

GA3.19 Predator control programs should be implemented where predation is a significant risk **using the most humane methods available**.

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4 FACILITIES AND EQUIPMENT

The RSPCA strongly recommends that there be a standard included which applies to all species that prohibits the housing of poultry in barren cages.

RSPCA recommends the addition of the following standard from the current Model Code of Practice:

SA4.2 Floors, other surfaces, fittings and equipment must be designed, constructed and maintained so as to minimise the risk of injury and disease, and to adequately support the birds.

Addition of the following standard:

SA4.4 A person in charge must ensure all housing systems are designed to allow poultry to stretch to their full height and stretch and flap their wings.

Multiple standards have been deleted from this section that the RSPCA disagrees with and recommends that they be added back in.

These standards are:

SA4.9 A person in charge must ensure that useable areas and any area occupied by feeding and watering equipment and nest boxes, on one or more levels ensure that;

1) each level is easily accessible to the hens
2) headroom between the levels is at least 45 cm
3) all levels are accessible to stock workers to observe and reach birds which are sick or injured
4) feeding and watering facilities are distributed to provide equal and ready access to all hens; and
5) levels are sited so as not to foul birds below.

Stocking densities

SA4.10 A person in charge must ensure that poultry are managed at a stocking density that takes the following into account;

1) growth rate
2) competition for space
3) access to feeders and water
4) air temperature and quality
5) humidity
6) litter quality and
7) activity levels and
8) <u>management capabilities.</u>

The underlined standard above was not in the previous standard but is another recommended addition.

The RSPCA has provided scientific evidence and proposed stocking densities for some species in an accompanying document. Stocking densities should be set as standards for each species and put in section B.

The RSPCA also recommends the addition of the following standards:

SA4.5 Environmental enrichment must be provided. Enrichment devices must be suitable for the species, provide stimulation, and allow behaviours which poultry are motivated to perform.

SA4.6 All poultry which lay eggs must have access to an enclosed nesting area. Nests must provide seclusion from the flock, and of adequate size and number to meet the laying needs of all poultry, and ensure poultry can lay without undue competition.

SA4.7 Where slatted or perforated plastic flooring is used, gaps or perforations must be no greater than 25 mm.

SA4.8 Perches must be provided at all times from the first week of age for species with motivation to perch, including all strains of chicken.

Addition of the following standard, taken from the Model Code of Practice:

GA4.1 Advice on welfare aspects must be sought when new equipment is being purchased, new buildings being constructed, or existing buildings modified.

The addition of the following bold text to the following guideline:

GA4.6 Exposure of poultry to stimuli **including sudden or loud noises** *that might cause fear and distress should be minimised where possible. Ventilation fans, feeding machinery or other indoor or outdoor equipment should be constructed, placed, operated and maintained in such a way that they cause the least possible amount of fear and distress.*

The 'sudden or loud noises should be minimised' was deleted from an earlier draft of the standards. It is a stressor and should be included as an example of stimuli that can cause fear and distress.

GA4.7 All poultry should be able to be inspected with ease (i.e. there is good access to all poultry and sufficient lighting).

The RSPCA recommends that this guideline become a standard. Inspecting animals is basic husbandry and critical to their welfare.

GA4.8 Poultry should have enough vertical and horizontal space available to stretch to their full height, **stretch** *and flap their wings,* **to walk freely, perch, ground-scratch, forage, and dust bathe.**

The RSPCA recommends that this guideline become a standard, and that the above bolded words be included. It is also included in the principles for poultry welfare section, where it is acknowledged that space to stand, lie and stretch their wings and limbs is essential to meet welfare requirements.

The following was previously included in a draft but has been deleted for the consultation draft. This should not be cut. If anything, more guidelines should be added, to specify that

adequate access to the outdoors should be provided, to allow easy access in and out of the shed and encourage access if birds are motivated to go outside.

GA4.21 Where poultry have access to a pop hole each pop hole should be of sufficient size to allow the passage of more than one bird at any one time.

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5 MANAGEMENT OF OUTDOOR SYSTEMS

The following standard has been changed to add 'kept in housing'. This addition means that any poultry that are kept outside do not need access to a shed and shaded areas. The RSPCA strongly objects to this wording. All species should have access to shelter for protection from sun and extreme weather conditions.

Ratites (including emus and ostriches) will seek out shade in hot temperatures. There is literature which supports this. In the Victorian DPI Code of Practice for the Husbandry of Captive Emus Minimum standards, it states under standard 2.1 that '2.1 Emus that are kept in yards or an extensive range must be provided with adequate shade and protection from the elements.' In the model code of practice for poultry (which includes geese) states, under housing, 'Birds on the range must have ready access to shaded areas and shelter from rain, and windbreaks should be provided in exposed areas.' A book 'Ostrich Production Systems' by Shanawany explains that ostriches seek shade, so shelters and shade trees are provided as well as water sprinklers and wading ponds as cooling aids.

SA5.2 A person in charge must ensure poultry kept in housing with access to an outdoor area have ready access to the shed and shaded areas.

The RSPCA proposes the following change:

SA5.2 A person in charge must ensure poultry ~~kept in housing~~ with access to an outdoor area have ready access to the shed and shaded areas.

The following change is proposed, indicated with strike through and bolded text below:

SA5.3 A person in charge must not keep poultry on land which has become contaminated with poisonous plants or chemicals which cause disease to an extent which could ~~seriously prejudice~~ **compromise** the health of poultry.

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6 LIGHTING

The RSPCA recommends the below revisions in bold and strikethrough text

SA6.3 A person in charge must ensure that the light intensity for poultry is at least **10** ~~5~~ Lux on average during light periods. **Average lux may be reduced temporarily during outbreaks of feather pecking or during catching for transport.**

SA6.4 A person in charge must ensure poultry are not exposed to continuous light or darkness in any 24 hour period ~~except on the day of pick-up (meat chickens) and meat chickens during very hot weather.~~

SA6.5 A person in charge must ensure poultry ~~except for meat chickens, emus, ostriches and quail~~ are exposed to at least 4 hours of continuous darkness within a 24 hour period.

As detailed in the accompanying notes, all species have a requirement for a dark period and they should certainly not be deprived of this in the standards.

The RSPCA recommends the addition of the following new standard.

SA6.5 A person in charge must ensure the lighting system provides a minimum period of 8 hours continuous artificial or natural lighting per day, and a minimum period of 4 hours continuous darkness (with all lights off) to be provided at night, in every 24 hour period.

7 TEMPERATURE AND VENTILATION

The RSPCA recommends the following change in bold and strikethrough

SA7.3 A person in charge must monitor ammonia levels and ensure immediate corrective action is taken if ammonia levels reach **15** ~~20~~ ppm at bird level in sheds.

20 ppm is too high to trigger corrective action. There is ample scientific evidence to support this.

Ammonia exposure causes irritation to the eyes and respiratory system, can cause an increased susceptibility to respiratory diseases, and can negatively affect growth rate and feed conversion efficiency (Kristensen and Wathes, 2000). It has been demonstrated that poultry exposed to 20 ppm ammonia have a higher susceptibility to Newcastle disease, and that broiler chickens avoided ammonia at concentrations of 20 ppm, demonstrating the aversiveness of ammonia at this concentration. In terms of human health, it has been found that humans exposed to ammonia at 12 ppm experienced significant pulmonary function decrements (David et al., 2015). Therefore, the standards should specify that ammonia concentrations should not routinely exceed 15 ppm (the level at which it can be smelled by humans), to avoid welfare issues in poultry as well as human workers.

David B., Mejdell C., Michel V., Lund V., and Moe R.O. (2015). Air Quality in Alternative Housing Systems May Have an Impact on Laying Hen Welfare. Part II—Ammonia. Animals, 5:886-896.

Kristensen H.H. and Wathes C.M. (2000). Ammonia and poultry welfare: a review. World's Poultry Science Journal, 56:235-245.

The RSPCA recommends that the following guideline become a standard. It is not covered by standard 7.1 because 7.1 does not specify daily monitoring and that birds should not suffer symptoms due to poor air quality. If a standard, the word 'recorded' could be removed for backyard poultry.

GA7.6 Air quality parameters, such as temperature, humidity and ammonia levels, should be monitored and recorded on a daily basis. Poultry should be monitored for eye and nasal irritation that might indicate ammonia, dust or other air quality problems.

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8 LITTER MANAGEMENT

The RSPCA recommends revisions to the following standards, indicated by bold and strike through text.

SA8.1 ~~Where litter is used, a~~ **A** *person in charge must ensure litter material is* **of good quality, friable, and** *suitable for the species ~~and of a good quality~~.*

The draft standards previously included the above wording which was deleted, but all species have a need for good quality litter in order to be able to forage, dustbathe, and to prevent adverse foot conditions and behaviours such as severe feather-pecking which has serious negative consequences for both welfare and productivity.

SA8.2 ~~Where litter is used, a~~ **A** *person in charge must ensure litter* **is free of toxic agent contamination** *~~the risk of contamination of litter with toxic agents is minimal~~.*

SA8.3 ~~Where litter is used, a~~ **A** *person in charge must manage litter to avoid excessive caking, dustiness or wetness that impacts on the welfare of poultry.*

The RSPCA recommends the addition of the following standard:

SA8.3 All birds housed indoors must have access to at least 250 cm^2 of littered area per bird, the litter occupying at least one third of the ground surface, in order for birds to forage and dustbathe.

The following guideline was deleted from a previous draft and should be re-inserted:

GA8.1 The floor of the shed should be completely and evenly covered in litter to a depth of at least 30mm depending on the material.

9 HANDLING AND HUSBANDRY

The RSPCA recommends that the following standard be amended as suggested:

SA9.1 A person must manage, ~~and~~ handle, **lift or carry** *poultry in a manner that* **does not cause** *~~minimises~~ pain, stress or injury to birds.* **Poultry must always be handled gently and with care.**

The RSPCA recommends the addition of the following standard:

SA9.3 A person must not handle birds, including loading for transport, showing signs of heat stress unless it is deemed necessary for their welfare.

Suggested emendations and deletions of following standards:

SA9.4 A person in charge must ensure that induced moulting is not ~~routinely~~ practiced.

~~SA9.5 A person in must ensure poultry are in adequate physical condition to endure an induced moult if necessary.~~

~~SA9.6 A person in charge must ensure that poultry induced to moult are:~~

~~1) in adequate physical condition to endure another lay cycle; and~~
~~2) not deprived of feed or water; and~~
~~3) not fed a high fibre/low energy diet for longer than 20 days or body weight loss of no more than 25%; and~~
~~4) provided with a calcium supplement.~~

Recommended change:

SA9.3 A person must free entrapped poultry **promptly and without delay** *~~at the first reasonable opportunity and if possible~~* **and take action to** *prevent this situation from recurring.*

Recommended addition (deleted from previous draft standards):

SA9.6 A person must have the relevant knowledge, experience and skills, or be under the direct supervision of a person who has the relevant knowledge, experience and skills to perform invasive procedures on poultry.

Recommended revision:

SA9.8 A person ~~other than a veterinarian~~ must not perform pinioning, castration or devoicing, on poultry.

There should be a standard added:

Where dubbing is performed, it must be performed by poultry veterinarians with sufficient experience, or accredited operators, using anaesthetics, anticoagulants and antibiotics.

Recommended addition:

There should be more standards around the practice of, and need for beak (and bill) trimming.

This includes the selection of birds that have lower propensity to feather peck, optimising the environment to reduce the risk of feather pecking (and that beak trimming should only be performed when all other management techniques to reduce the risk of feather pecking have been implemented), and that beak-trimming should only be performed by experienced operators.

Recommended revision:

SA9.20 A person in charge must ensure cull or surplus hatchlings awaiting disposal are treated humanely, **handled gently,** *and are killed as soon as practicable* **using a humane and rapid method.**

Recommended revision:

GA9.5 Poultry should be released by setting them down on their feet ~~or from low heights that enable them to land normally, feet first.~~ *Avoid releasing in such a way that requires flying.*

Poultry, and particularly broilers, should not be dropped from any height. All birds should be released by setting them down gently on their feet and not thrown or dropped.

The following two standards are not covered by the handling standards above and should therefore be moved to standards.

GA9.6 Mechanical catchers, where used, should be designed, operated and maintained to minimise injury, stress and fear to the birds. A contingency plan is advisable in case of mechanical failure.

GA9.7 Poultry that are identified as unfit or injured before or during the catching procedure should be humanely killed immediately.

10 HUMANE KILLING

Recommended revision:

SA10.1 A person in charge must ensure killing methods for poultry result in rapid death~~,~~ or **rapid** *loss of consciousness~~,~~ followed by death while unconscious.*

It is extremely important to poultry welfare that the standards in this section specify methods which are not acceptable due to welfare risks, such as crushing of the neck, as is specified in the slaughter section.

The following guideline should be moved to a standard:

GA10.5 Equipment that crushes the neck and methods of cervical dislocation that require spinning or flicking of the bird by the head should not be used.

Recommended revision:

SA10.2 A person must have the relevant knowledge, experience and skills to be able to humanely kill poultry, or be under the direct supervision of a person who has the relevant knowledge, experience and skills **at all times**, *unless:*

1) the poultry are suffering and need to be killed to prevent undue suffering; and
2) there is an unreasonable delay until direct supervision by a person who has the relevant knowledge, experience and skills becomes available.

The exception is unacceptable and really needs to be clarified. RSPCA is aware that this standard was written to accommodate backyard poultry, in cases where there may not be a vet or competent person readily available. However, as the standard currently reads, there is the possibility for many birds, even in commercial conditions, to be killed by incompetent people on a regular basis, since the standard is very vague.

Poultry should never be killed by an incompetent person. Any person who has full responsibility over birds and who may experience delay in a skilled person becoming available, needs to be competent in humane killing, and able to do so quickly and without causing pain or distress to the bird.

If a standard similar to this remains, it needs to be much more specific, and detail that only in backyard situations where a bird is in an immediate state of suffering and there are no people available with relevant knowledge, and certain methods which may be used should be specified.

There is currently a very large number of birds kept in backyards (12% of the whole layer hen industry). And standards are required to protect their welfare, as well as the welfare of birds in commercial situations. Killing, when not done appropriately, is a big risk to the welfare of birds.

The following guidelines should be amended as follows:

GA10.2 Acceptable methods should be used for the humane killing of poultry, these are:

- *cervical dislocation ~~or decapitation~~ for poultry less than 6 kgs*
- ~~*stunning by blunt trauma followed by decapitation or bleeding out for poultry over 6 kgs*~~

Decapitation is not a humane method of killing as birds may be conscious for up to 30 seconds following decapitation.

There are significant risks associated with blunt trauma which makes it not a humane method to recommend. Poultry greater than 6kgs should be killed using a captive bolt gun.

Due to the extremely high risk to poultry welfare if the method of killing is not effective, the following guideline should be moved to a standard:

GA10.6 Three or more signs should be observed to determine whether the method used for humane killing has caused death.

The final sign of death, clear gap of skin, does not convey the intention of the guideline and is very ambiguous. This should be amended to convey the meaning.

Note: Signs of death include:

- *loss of consciousness and deliberate movement including eye movement*
- *absence of a corneal 'blink' reflex when the eyeball is touched, or*
- *maximum dilation of the pupil*
- *absence of rhythmic respiratory movements for at least 5 minutes*
- *in case of cervical dislocation, manual verification of a clear gap of skin only in the neck area.*

11 POULTRY AT SLAUGHTERING ESTABLISHMENTS

There are many guidelines that should be included as standards, particularly those which relate to the optimal functioning of stunning systems, including guidelines pertaining to the correct operation of stunning equipment, the time birds may be suspended, and the time that bleed out must occur. Since transport, handling and slaughter are extremely high risk in terms of poultry welfare, pain and distress, additional guidelines are important in this section. Certainly the below guidelines should be standards at a bare minimum:

GA11.2 All poultry in holding areas should be checked at a minimum of every 2 hours for welfare. Checks should be recorded on the daily monitoring form.

GA11.4 The lairage at the processing plant should be covered to provide shelter and shade and be fitted with fans and misting equipment to allow cooling of poultry as required.

GA11.5 The shackle should be able to accommodate the shanks of birds of different size and weight without causing undue trauma to the birds.

GA11.8 If poultry are shackled a breast comforter should be installed from the end of the shackling point to the stunner and be operating in a manner that does not cause injury to poultry.

GA11.9 Poultry should not be suspended from the shackling line for more than 3 minutes for domestic fowl and turkeys before they are stunned.

However RSPCA recommends that above 3 minutes be revised to 1 minute, and apply to all species.

GA11.10 Equipment and procedures for stunning should ensure that poultry are immediately rendered unconscious without receiving pre-stun shocks.

GA11.11 Effective electrical water bath operation should include:

- *effective earthing*
- *proper adjustment of the water height in the water bath according to the size of the bird*
- *proper construction of the entry ramp*
- *correct immersion of the birds in the water ramp*
- *proper adjustment of the voltage and amperage to the age and size of the bird.*

GA11.13 Poultry should not be subjected to the gas mixture until the correct concentration has been reached.

GA11.15 Bleeding out times prior to immersion for scalding or prior to plucking should not be less than 90 seconds for domestic fowl and 2 minutes for turkeys.

B1 LAYING CHICKENS

The following two standards have been deleted from an earlier draft of the standards. The RSPCA does not believe that animals should be confined to barren battery cages. However, all flooring should be designed to support each forward pointing toe, and all housing facilities should enable birds to be visible for inspection and these two standards must be re-included.

SB1.3 A person in charge must ensure where poultry are confined in cages, the floor is be constructed to enable support for each forward pointing toe.

SB1.4 A person in charge must ensure that all poultry in multi deck cages are visible for regular inspection.

Recommended revision to standard below in bold font:

SB1.3 A person in charge must ensure poultry in cages are able to stand at a normal height. Cages must be at least higher than the maximum height of all the poultry standing normally. The height of all cages must be at least 40 cm over 65% of the cage floor area **and not less than 35 cm at any point**.

As flagged in a previous draft, this was in the Code of Practice and there is no reason the housing facility should not be able to provide this and that this should be removed from the standard.

The below standard conflicts with the above – it is acknowledged that there must be at least 45cm of headroom for birds. This should be reflected in the above standard SB1.3.
SB1.4 A person in charge must ensure that, for useable areas and any area occupied by feeding and watering equipment and nest boxes, on one or more levels ensure that;

1) each level is easily accessible to the hens
2) headroom between the levels is at least 45 cm
3) all levels are accessible to stock workers to observe and reach birds which are sick or injured
4) feeding and watering facilities are distributed to provide equal and ready access to all hens; and
5) levels are sited so as not to foul birds below.

The RSPCA recommends the following revision, indicated with strikethrough and bold font.

SB1.5 A person in charge must ensure that after the training period, where hens are housed under artificial light, lighting schedules must provide a minimum of 4 **8** hours of continuous darkness in each 24-hour period**, and 8 hours of continuous light in each 24-hour period**.

Stocking Densities Cage Systems

RSPCA Australia insists that a phase out of cages must be included within the standards and guidelines document. See the accompanying document presenting the scientific evidence supporting this position.

A number of these guidelines in this section should be moved to standards, including the guidelines for lighting, litter, nests and perches. Scientific evidence to support this is included in accompanying documents.

GB1.16 Perches should be constructed and positioned to:

- *be raised above and not flush with floor areas*
- *allow birds to access them*
- *allow birds to stand in a normal posture*
- *provide a comfortable support for the bird's feet and keel bone*
- *minimise the risk of injury*
- *prevent vent pecking by birds below and/or behind*
- *minimise soiling of birds below.*

The current MCOP states that linear perches should allow not less than 15 cm per hen, and the horizontal distance between the perches be at least 30 cm but not more than 1 m, and the horizontal distance between perch and the wall should be at least 20 cm.

Perches should support birds' feet, and thick enough that the claws don't pierce the foot pad – e.g. 4 cm wide), and not have sharp edges.

Colony Cages

All hens should have continuous access to good quality litter, perches providing 15cm of perch space per bird, and there should be stocking densities specified for colony cages.

The following standard, which is included for meat and laying chicken breeders, must also be included for all poultry species, with standards specific to how they should be handled:

SB3.6 A person in charge must ensure meat and laying chicken breeders are not lifted or carried by the head, neck, wings, feathers or tail feathers unless otherwise supported by the breast, except if lifted and carried by the base of both wings.

A standard must be included on how the birds may be handled.

SB3.6 A person in charge must ensure meat chickens are not lifted or carried by the head, neck, wings, feathers or tail feathers, except if lifted and carried by the base of both wings.

B2 MEAT CHICKENS

SB2.1 A person in charge must ensure that after 7 days of age, lighting patterns must encourage activity and provide a minimum period of 4 hours of continuous darkness each day except on the day of pickup (meat chickens) and meat chickens during very hot weather.

There should be a standard included with a requirement for a continuous dark period for chicks less than 7 days of age. Chicks should receive at least one hour of darkness in the first 24 hours, and more after that.

Maximum acceptable live weight densities for Meat Chickens (Non-Caged Systems)

[4] Meat chickens include birds (Gallus gallus) being reared and managed for meat production purposes and do not include birds being reared and managed for the purpose of breeding meat chickens (see Part B3). While meat chickens in Australia are currently reared and managed using only non-caged systems of husbandry, this Part should not be interpreted as precluding the future use of innovative husbandry systems offering improved animal welfare outcomes.

The note above, indicating that use of cages are permissible, has been added to the draft standards and was not present in previous drafts. Cages should absolutely not be introduced for meat chickens due to extreme welfare consequences. Housing meat chickens on wire and an absence of litter causes physiological stress, as well as mechanical stress and an increase in leg infections. This would also be a very negative image for the industry, which is already being tarnished by the egg industry's use of battery cages.

The RSPCA does not support housing poultry in cages.

There must be a standard specifically prohibiting the use of cages for meat chickens and breeder bird. Evidence on the extreme negative consequences of housing poultry in cages is provided in the body of the submission.

The wording '(Non-Caged Systems)' would therefore be redundant.

In the MCOP, 'A2.1.3 In managing meat chickens to avoid the effects of heat stress, the combination of potential weather patterns, shed design, temperature and humidity control capabilities, and the grower's management record, must be considered by processors and growers when determining stocking densities and pick up dates. These must be planned to ensure that birds are not put at risk of death from the effects of heat stress. Increased mortalities that can be attributed to heat related causes are not acceptable. High stocking densities restrict the birds' abilities to move and may result in increased leg weakness. This should be monitored and stocking densities decreased if leg weakness occurs.'

There is no reason why these considerations should not be incorporated into the current standards for meat chickens.

SB2.3 A person in charge must not exceed the following stocking densities for meat chickens:

Tunnel ventilated or extractive systems etc. - Evaporative cooling system capable of 1 air exchange per minute: 40 kg/m2 year-round
Other mechanically ventilated Stirring fans 40 kg/m2 in winter
Water-based cooling system 36 kg/m2 in summer

The current stocking densities for meat chickens are extremely high, and the majority of the industry is already operating to lower stocking densities. There is sufficient evidence provided in the body of this submission supporting a significant lowering of maximum stocking density to 34kg/m^2 for tunnel and mechanically ventilated systems for bird welfare.

The extremely fast growth of broilers contributes to many welfare issues including leg and metabolic problems. A standard or guideline on the welfare advantages of slower-growing broilers must be included here.

A standard must be included on how the birds may be handled.

SB3.6 A person in charge must ensure meat chickens are not lifted or carried by the head, neck, wings, feathers or tail feathers, except if lifted and carried by the base of both wings.

B3 MEAT AND LAYING CHICKEN BREEDERS

The same comments apply to chicken breeders as to layer hens above. This includes that animals should not be kept in barren cages and should be provided with more space than is currently afforded to them, that the birds should also receive a dark period of at least 8 hours continuous darkness in each 24 hour period, and that the maximum stocking densities be lowered.

As above, the RSPCA opposes housing animals in barren cages, which have extremely poor welfare consequences for the birds. Their use should be prohibited in the general section which applies to all species.

The following standard must be revised:

SB3.6 A person in charge must ensure meat and laying chicken breeders are not lifted or carried by the head, neck, wings, feathers or tail feathers ~~unless otherwise supported by the breast~~, except if lifted and carried by the base of both wings.

Chickens must certainly never be carried by the head, neck, wing tips or feathers, and this would not be acceptable if they were also supporting the breast. Those body areas are not appropriate to bear the body weight of the bird and is extremely poor practice.

B3 DUCKS

Ducks must certainly never be carried by the head, legs, wings or feathers, and this would not be acceptable the breast was also supported as it implies that those body areas are weight-bearing. Those body areas are not appropriate to bear the body weight of the bird (even if the breast is also supported), and is extremely poor practice.

In the Model Code of Practice, it specified that birds must not be lifted by a single wing, but this has been omitted from these standards. It should be included.

SB4.1 A person must ensure ducks are not lifted or carried by the head, legs, wings, feathers or tail feathers ~~unless otherwise supported by the breast~~.

The following standard has been removed from an earlier draft but should be re-included:

SB3.2 A person must ensure care is taken in catching ducks to avoid creating panic and subsequent injury or smothering of the birds.

This is in MCOP:

'Older ducks should be lifted by the neck or wings and they should be supported either by taking the weight of the bird by a hand placed under its body, or by holding the bird with a hand on either side of its body with the wings in the closed position. Once sufficiently developed, lifting by the wings is the best method, providing support is given under their body. Ducks must not be lifted by a single wing. Ducks must never be held or lifted by the legs.'

There is no reason for this to be omitted from the current standards and guidelines.

The following guideline has been omitted from an earlier draft and should be re-included:

GB3.3 Bill trimming should be carried before the birds leave the brooder or rearing accommodation.

B5 EMUS

The following standard has been deleted from an earlier draft but is an important standard for animal welfare and should not be cut out. Emus need shade and protection from the elements in order to ensure their welfare. In the minimum standards in the Victorian DPI code of practice, it states that 'Emus that are kept in yards or an extensive range must be provided with adequate shade and protection from the elements'. There is no welfare reason that the present standards should not provide emus with appropriate shade and shelter.

SB4.2 A person in charge must ensure that emus are kept in yards or an extensive range with adequate shade and protection form the elements.

Similarly, the following standards have been cut from the current draft:

SB4.4 A person in charge must ensure an emergency delivery system is able to deliver adequate supplies of water in the event of a power failure.

SB4.5 A person in charge must ensure emus are electrically stunned or made unconscious by captive bolt prior to bleeding.

These are all important to reduce risks to bird welfare and should not be removed, although SB4.5 should be amended to be firearm or sedation followed by captive bolt or decapitation for adults, and captive bolt or sedation followed by decapitation or bleeding to ensure death for young birds.

The following guideline should be included as a standard for all species, and be reduced to 15ppm.

GB5.8 In enclosed buildings, ammonia levels should not be allowed to exceed ~~20~~ **15** *ppm of air, measured at bird level, without immediate correction action being taken.*

There must be standards in each species-specific section to specify how the birds may and may not be handled. The below guideline is currently included:

GB5.18 Emus should be picked up by supporting the body and not lifted solely by the legs.

Although there is a standard on how breeder birds should be handled. A standard should be included on handling:

A person in charge must ensure emus are not lifted or carried by the head, neck, wings, feathers or tail feathers.

B6 GEESE

As indicated above for other species, the following standard should be amended so that birds are never lifted by inappropriate, non-weight-bearing body parts such as the head.

SB6.3 A person must not lift or carry geese by the head, neck, legs or feet, wings, feathers or tail feathers ~~unless otherwise supported by the breast~~.

The following guideline should be a standard for all species:

GB5.2 At all times geese should be handled by competent experienced handlers so that they are not disturbed unduly.

B7 GUINEA FOWL

The following standard should be revised:

SB7.1 A person must not lift or carry guinea fowl by the head, legs, neck, wings, feathers or tail feathers ~~unless otherwise supported by the breast~~.

The following standard should include 'stocking densities must not exceed…'

SB7.2 A person must ensure the maximum stocking densities ~~for guinea fowl are according to housing type and under good management conditions and as follows;~~ **do not exceed:**

As indicated in comments for other species, the RSPCA opposes animals being kept in barren cages. This also applies to guinea fowl, where stocking densities are specified for cage facilities. A general standard in section A should be included to prohibit housing any poultry species in cages.

B8 OSTRICHES

Following revision recommended:

SB8.1 A person must ensure where a bird **is in an irrecoverable state of pain such as a** ~~*has suffered*~~ *leg rotation, it must be* **promptly treated** ~~managed~~. *If the bird has difficulty in rising or walking and has significant heat, pain and swelling* **in the leg**, *the bird must be humanely* **and promptly** *killed.*

The following two standards have been removed from an earlier draft, but should be included.

SB7.3 A person in charge must ensure feathers, including the wing feathers, must not be removed by cutting from the live bird by untrained people.

SB7.4 A person in charge must ensure the feathers must be cut no closer than 10 mm to the bloodlines. Feathers without a ripe bloodless clearance above the bloodline must be left on the bird. All other feathers must be removed post-mortem.

A standard must be included to specify incorrect handling methods, as in other species sections. I.e.

A person must not lift or carry ostriches by the head, legs, neck, wings, feathers or tail feathers.

The below standard should be amended – decapitation is not a humane method of killing as consciousness may persist for up to 30 seconds.

GB8.17 *When necessary, chicks should be humanely killed by* **captive bolt gun or by** *dislocating the cervical spine by a person experienced in this technique.* ~~Alternatively chicks can be decapitated.~~

This should also be included as a standard – proper methods for euthanasia and who may perform it.

Assumedly captive bolt guns are also appropriate for humane killing where close restraint is possible.

GB8.19 Where a firearm is used a .22 calibre rifle long rifle or magnum should be used for the humane killing of ostriches.

The following guidelines have been removed, although it would be beneficial to include guidelines for best practice and minimising risk to welfare during killing.

- **never fire while the bird is moving its head; wait patiently for a quiet interval before firing;**
- **to provide maximum impact and the least possibility of misdirection the range should be as short as circumstances permit;**
- **it is not safe to press the firearm on the head.**

B9 PARTRIDGE

The following revision should be made:

SB9.1 A person must not lift or carry partridge by the head, legs, neck, wings, feathers or tail feathers ~~unless otherwise supported by the breast~~.

The standards and guidelines are still extremely inconsistent between species. Some species include quite a lot of detail whereas others such as partridge have very few standards and guidelines. Assumedly, this is due to the input by various industries. This needs to be rectified and a similar level of detail included for all species by including more comprehensive standards and guidelines to reduce the risks to poultry welfare for all species.

In current MCOP:

A8.2 Beak Trimming

Every effort should be made to avoid beak trimming by the appropriate selection of birds and the provision of conditions which reduce the tendency for adverse traits, such as cannibalism, to occur.

Beak trimming should be performed only by an experienced operator or under the direct supervision of an experienced operator. The development of an accreditation training program for the industry is strongly encouraged.

To prevent cannibalism up to one-third of the upper beak may be removed within 72 hours of hatching.

These guidelines should be included.

B10 PHEASANTS

Existing MCOP standards include:

A6.2 Beak Trimming

Every effort should be made to avoid beak trimming by the appropriate selection of birds and the provision of conditions which reduce the tendency for adverse traits, such as cannibalism, to occur.

Beak trimming should be performed only by an experienced operator or under the direct supervision of an experienced operator. The development of an accreditation training program for the industry is strongly encouraged.

A maximum of one third of the upper beak may be removed at 4 and 8 weeks of age.

These guidelines should be included.

B10 PIGEONS

The following revision should be made:

SB11.2 A person must not lift or carry pigeons by the head, legs, neck, wings, feathers or tail feathers ~~unless otherwise supported by the breast.~~

There is no maximum stocking density included for pigeons where there is for other species.

There are a number of standards which have been deleted from an earlier draft and should be re-introduced:

SB10.1 A person in charge must ensure free non-flight time, is done under direct supervision.

SB10.2 A person in charge must ensure persistent fielding and or roof sitting is not done.

SB10.4 A person in charge must not administer any performance enhancing drug to a racing pigeon including any of the anabolic steroids or corticosteroids.

SB10.6 Racing pigeons must be housed within a loft, designed to provide adequate and appropriate shelter and accommodation for the birds.

Perches and nest boxes should also be provided and included as standards.

Current MCOP includes:

A10.4 Beak Trimming

Every effort should be made to avoid beak trimming by the appropriate selection of birds and the provision of conditions which reduce the tendency for adverse traits, such as cannibalism, to occur.

Beak trimming should be performed only by an experienced operator or under the direct supervision of an experienced operator. The development of an accreditation training program for the industry is strongly encouraged.

The tip of the cock bird's beak may need to be trimmed to prevent injury to a timid hen.

A10.5 Transport

A10.5.1 Transport crates for squabs should be of a maximum height of 15 cm and should provide a minimum floor space of 200 cm2 /bird

A10.5.2 Adult pigeons require a minimum of 450cm2 /bird floor space during transit.

B12 QUAIL

The following standard should be amended as follows:

SB12.2 A person must not lift or carry quail by the head, legs, neck, wings, feathers or tail feathers ~~unless otherwise supported by the breast~~.

B13 TURKEYS

SB13.3 A person must not lift or carry turkeys by the head, neck, wings, feathers or tail feathers ~~unless otherwise supported by the breast.~~ Except ~~when lifted by the tail feathers and neck or by a leg and a wing or~~ by the base of both wings for vaccination~~.~~

Exceptions to be carried by the tail feathers, neck, leg and a wing are unacceptable.

The following standard should be included as a bare minimum:

Toms must not be overstimulated during semen collection, or injury may result. Any toms that have shown cloacal bleeding during collection should be rested for 3-4 days.

Include the following as a standard:

GB12.14 Beak trimming must only be performed if all other measures to prevent injurious pecking have been undertaken (including by the appropriate selection of birds and the provision of conditions which reduce the tendency for adverse traits to occur). When performed, beak trimming must be performed only by an experienced operator or under the direct supervision of an experienced operator.

Key guidelines on acceptable methods of handling should also be included as standards to reduce risks to bird welfare for all species.

GB13.19 When catching poults, the catching technique should ensure;

- *poults are caught by both legs*
- *no more than ~~8~~ **6** poults should be carried at once.*

6 at an absolute maximum.

The following proposed guideline should be included as a standard, and standards included for all species on appropriate and inappropriate handing including catching methods.

Turkeys should not be caught and dragged by the head or neck, or be thrown, swung or dropped into a crate or module.

Guidelines on humane killing have been deleted and need to be re-included as standards. This includes:

GB12.25 Neck dislocation of turkeys up to 8 kgs should only be performed by those trained and experienced in this practice.

GB12.26 Turkeys over 8 kgs should be killed by fire arm, captive bolt or a cash poultry killer by appropriately licenced personnel.

GLOSSARY

Cages *A system of housing where the birds are confined to cages either singly or in multiples with a wire floor . ~~With this system the stock do not come into contact with their own or other bird's faeces which is an important disease control measure.~~*

The above strikethrough text should be deleted. This is irrelevant to the definition, and also applies to non-cage systems with slatted flooring.

Cannibalism *The practice by some birds of ~~attacking and~~ eating other members of the same flock.*

Cannibalism does not include agonistic behaviour or attacking, it is just eating.

Pop hole *A small opening that provides access between indoor and outside areas.*

Pop holes are not necessarily small, and on the contrary, need to be large enough to prevent smothering, allow good visibility onto the range, and encourage access to the range.

Poultry *Following bird species reared or bred in captivity:*

chickens, ducks, emus, geese, guinea fowl, ostriches, partridges, pheasants, pigeons, quail and turkeys.

Birds that are kept in captivity for any reason, including those that are kept for shows, races, exhibitions, competitions or for breeding or selling.

By this definition, all pet birds are considered poultry and would be covered by these standards.