

POULTRY WELFARE STANDARDS AND GUIDELINES – NESTS, PERCHES, DUST-BATHING

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Prepared by the Poultry Standards and Guidelines Drafting Group, Oct 2016

ISSUES

The provision of nests, perches and facilities for dustbathing and foraging in poultry housing increases the opportunities for poultry to exhibit innate behaviours. Provision and design of nests and other furnishings in poultry housing may make positive (behaviour) and negative (e.g. injury) contributions toward bird welfare.

RATIONALE

Gallinaceous birds (chickens, quail etc.) are motivated to perch, nest, dust-bathe and forage as part of their behavioural repertoire (Olsson and Keeling, 2005; Hester, 2014; Widowski, 2016). Provision of perches, nests and substrate for dust-bathing in poultry housing may allow the birds to express a greater range of these 'natural behaviours' during confinement in caged and non-caged housing systems.

Apart from the positive effect of perching on bone strength in caged birds, there is little physiological evidence to indicate that bird welfare is impaired if these resources are not provided. However, there is substantial behavioural evidence that chickens are motivated to perform these behaviours if given the opportunity (Widowski et al., 2016 unpublished). 'The welfare implications of depriving hens of these behavioural opportunities remain largely unknown, but the opportunity to perform them may be conducive of positive welfare states' (Widowski et al., 2016 unpublished).

In this paper, poultry cages with perches and nests (plus or minus an area for dust-bathing/foraging) are referred to as 'furnished cages'; those without these furnishings are referred to as 'conventional cages'.

RECOMMENDATIONS

The drafting group considered current scientific knowledge and practice and agreed that standards and guidelines were required to underpin the welfare of housed poultry.

Standards are proposed to ensure that:

- Nest boxes, where provided, are easily accessible to the hens
- Nest boxes are provided to laying chickens in lay in non-cage housing systems
- Nest boxes are provided for meat and laying chicken breeder birds, duck breeder birds and turkey breeder hens during egg production
- Poultry on perches are protected from excreta of birds perching above
- Sufficient perch space is provided to pigeons.

Guidelines are proposed to:

- Recommend provision of environmental enrichment in poultry housing, including, but not limited to:
 - Nests
 - Perches/barriers
 - Objects for pecking
 - Dust-bathing materials
 - Bales of hay or straw
 - A radio to accustom poultry to a range of noises and voices.
- Provide specifications for provision of nests, perches and dust-bathing materials that:
 - allow adequate access for all birds to express innate behaviours without undue competition for resources
 - minimise the risks of entrapment or injury of birds.

ANIMAL HEALTH AND WELFARE CONSIDERATIONS

General

The welfare benefits of environmental 'enrichment' are confounded by many factors, including housing system (cage, non-cage), stocking density, species, age and type of poultry (meat/layer/breeder), climate and other management factors. Experimental studies are not able to reproduce the conditions of commercial poultry production; it can therefore be difficult to reconcile conflicting experimental results on the welfare benefits of providing nests, perches and other environmental enhancements to housed poultry. It is generally accepted that provision of nests, perches and other enhancements in poultry housing can allow poultry to express a wider behavioural repertoire than is possible in conventional cages. However, their provision can also lead to increased competition for resources, and to increased risk of injury of birds.

Maximum benefits of providing nesting, perching and dust-bathing facilities are realised if poultry are exposed to these items during rearing. Therefore, overseas codes of practice that require provision of perches, nests and dust-bathing facilities for adult poultry generally encourage (or require) their introduction during the rearing phase.

Nests

Hens are motivated to lay their eggs in a discrete enclosed nest box. Chickens exhibit pre-laying behaviour, which includes searching for a nest, before oviposition. In an experimental study, caged hens without access to a nest box spent more time pacing in the pre-laying phase than caged hens with a nest box (Yue and Duncan, 2003). Use of nests is affected by nest design and size, with hens preferring secluded nests and nests lined with artificial turf (or similar) over plastic-covered mesh (Widowski, 2016). Provision of nests can lead to aggressive behaviour as hens compete for access during peak laying times (Hunniford et al., 2014). The number of cracked and dirty eggs can be greater in furnished cages than conventional cages, depending on nest design (Widowski et al., 2016).

Rearing experience of pullets may affect use of nest boxes as laying hens, with hens raised on litter laying more floor eggs in furnished cages than hens reared on wire. In addition to rearing experience, hen perception of what constitutes a desirable nest appears to vary, with some hens consistently choosing to lay outside a nest box even when one is available (Widowski et al., 2016).

Perches

The addition of perches to a housing system can have both positive and negative consequences (Lay et al., 2011). Bone strength in caged layers is improved when a perch is present (Lay et al., 2011; Barnett and Cronin, 2005), in addition to the benefits for behavioural expression. However, accidents during landing from perches can lead to fractures, and high use of perches can lead to keel bone deviations (Lay et al., 2011).

In an experimental study comparing bird behaviour in conventional and furnished cages, Appleby (1993) found that layers in furnished cages spent about 25% of day time on perches, and the majority of birds (90-94%) roosted on perches at night. Hester et al. (2014) reported that exposure to perches during rearing was not required to encourage adult hens to use perches in layer cages. However, pullets adapt more readily to tiered aviary systems, increasing the use of the three-dimensional space, increasing water and food consumption and reducing floor eggs, if they have been exposed to complex environments including access to perches during rearing (Widowski et al., 2013).

Ventura et al. (2012) found that, under experimental conditions, simple barrier perches were well-used by broiler birds, led to increased activity levels and reduced aggression and disturbances. In contrast, other studies have found that perch use by meat chickens was lower than expected (Le Van, 2000; Su et al., 2000) and provision of perches resulted in no measurable welfare benefits.

Good perch design is essential to encourage perch use and to prevent injuries to birds in both furnished cages and non-caged housing systems. Provision of perches has been associated with an increased incidence of leg bone fractures and keel bone fractures and deformations, presumably due to landing failures and other accidents (Widowski, 2013). The incidence of fractures is greater in multi-tiered non-caged systems than in furnished cages with perches.

Dust-bathing facilities

Hens are motivated to perform dust-bathing behaviour irrespective of their environment, but they show clear preferences for certain types of dust-bathing substrates (e.g. sand, peat). Dust-bathing is a behaviour performed by fowl in a sequence of linked activities. When birds have unrestricted access to litter or sand, adult birds dust-bathe every second day. When birds have no access to suitable litter, they 'sham dust-bathe' – that is, they go through a similar sequence of behaviours but on the bare floor (Olsson and Keeling, 2005). Hens are stimulated to dust-bathe by the presence of suitable dust-bathing substrate, particularly in the presence of light and heat. However the absence of substrate does not eliminate the development of the behaviour in young birds, or the persistence of behaviour in older birds. Some studies have shown that hens housed in furnished cages do not use the dust-baths as much as expected, and considerable sham dust-bathing is still seen. Hens housed on wire will exhibit sham dust-bathing behaviour, often using the feed for beak-raking, but 'whether or not this behaviour is satisfactory from a welfare point of view remains to be established' (Olsson and Keeling, 2005).

REVIEW OF NATIONAL POLICIES AND POSITIONS

Australian jurisdictions have no legislated provisions regarding provision of nests or perches in poultry houses.

In the current Australian **Model Code of Practice for Poultry** 4th edition (2002), there is no requirement for hens housed in cages to have access to nests, perches or litter. For **non-caged systems**, the Model Code encourages adequate **perching** space for laying hens, pullets and breeder hens; if perches are provided all birds should have the opportunity to roost, and linear perches should allow not less than 15cm per hen. **Nests** must be provided for

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laying hens in non-cage systems (1 nest per 7 hens or 1m² nest box area per 120 hens). For turkey breeders, 1900cm² should be provided for each five breeding hens. Perches and nests should be provided for pigeons.

The **RSPCA Australia** approved farming scheme standards for pullets specifies:

*That **Perches** must be introduced:*

a) by 10 days of age for floor-based systems

b) by 3 weeks of age for tiered systems.

Perches must be provided at not less than 5cm per bird.

Perches must be constructed and positioned to:

a) be raised above and not flush with floor areas

b) allow birds to access them

c) allow birds to stand in a normal posture

d) provide a comfortable support for the bird's feet and keel bone

e) minimise the risk of injury

f) prevent vent pecking by birds below and/or behind

g) minimise fouling of birds below.

*Birds must have access to litter or a veranda to **dust-bathe** and forage.*

The **RSPCA Australia** approved farming scheme standards for layer hens have requirements for litter and **perches** for laying hens (with increased perching space to accommodate the size of the bird), and in addition, **nests** must be provided (one nest for every 7 birds or 1m² next boxes for every 120 birds). Nests must be enclosed and have suitable flooring to encourage nesting.

The **RSPCA Australia** approved farming scheme standards for meat chickens specify that birds should have access to litter, perches and pecking objects.

The **Australian Veterinary Association** (AVA) has no specific policies on the provision of perches, nest, or dust-bathing substrate to poultry.

REVIEW OF INTERNATIONAL POLICIES AND POSITIONS

This section is included to provide a brief international context, while acknowledging that Australia's poultry production systems may vary from production systems, poultry breeds and climatic conditions in other countries.

The **Canadian Agri-food Research Council** *Code of Practice for the Care and Handling of Farm Animals - Poultry – Layers* (2003 – under review) recommends:

- Caged systems do not require nest boxes, perches or litter
- For non-caged systems, nests should be easily accessible at a height to minimise injury; the code recommends 20 individual nests per 100 hens. For aviaries, an adequate number of perches should be provided.

The **DRAFT Canadian National Farm Animal Care Council Code of Practice for the care and handling of pullets and Laying hens** is currently available for consultation. The **DRAFT** provides for a phasing out period of conventional (unfurnished) cages and **REQUIRES** that

- for pullets: **perches** be provided to chicks reared in multi-tier systems, that perches must be constructed of materials that are easily cleaned; designed to prevent injury; positioned to prevent trapping and allow access to feed and water and positioned to minimize faecal fouling of birds, feeders and drinkers below them.
- For layers: **nests** and **perches** must be provided in both cage and non-caged housing systems (with detailed specifications in the draft document). Dust-bathing substrate is not required in caged or non-cage systems, but a flooring surface that allows a proportion of hens to forage simultaneously will be required.

The **Canadian National Farm Animal Care Council Code of Practice for the care and handling of hatching eggs, breeders, chickens and turkeys (2016)** **REQUIRES** that a sufficient number of **nests** must be provided for the strain and number of broiler breeders and turkey breeders.

The **New Zealand National Animal Welfare Advisory Committee's Animal Welfare (Layer Hens) Code of Welfare 2012** states:

Housing systems, with the exception of cages, must provide facilities for roosting (e.g. **perches**), a surface for pecking and scratching, and a secluded nesting area.

Colony cages and barns must include secluded **nest** areas with suitable substrate preventing contact between the hen and the wire mesh floor. **Perches** must be provided, and in colony cages perch space must be at 15cm per bird to allow all birds to perch at the same time.

Conventional cages (without nests and perches) are to be phased out by 2022.

The **New Zealand Animal Welfare (Meat Chickens) Code of Welfare 2012** does not **REQUIRE** perches, but recommends that **perches**, barriers, bales of hay or straw, **dust-bathing** substrate etc. be provided to maximise the expression of normal behaviours.

The **European Union Council Directive 1999/74/EC** on layer hens states that:

Conventional cages must be phased out by 2012; each laying hen in enriched cages must have specified space allowance, a **nest**, **perches**, and litter for pecking and scratching, in addition to other requirements.

The **European Union Council Directive 2007/43/EC** on broiler chickens has no requirements for nests or perches but does require chickens to have access to litter.

The **OIE Terrestrial Animal Health Code** for broiler chickens states:

The provision of loose and dry bedding is desirable in order to insulate the chickens and encourage dust bathing and foraging. The Code also recognises that broilers may be kept on slatted floors without other flooring substrates.

The OIE Code does not have a chapter for layer hens.

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