

THE HUMANE LEAGUE
JAPAN



KEY CRITERIA

for Higher Welfare Cage-Free Egg Production

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PURPOSE OF THE CRITERIA

THL Japan's **KEY CRITERIA FOR HIGHER WELFARE CAGE-FREE EGG PRODUCTION** are provided as a guide to aid producers, food companies and the egg industry in the development of their own cage-free standards. The criteria are based on scientific and field-based evidence of good-practice, and developed in consultation with existing cage-free producers and animal protection organisations in Japan.

This document is not intended as a comprehensive guide or set of standards, but as a framework from which minimum standards, best practice guidelines and regulations can be built. For further advice or information regarding this guide, please contact:

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Criteria Overview

Essential criteria:

- 1.** It must not be possible to confine birds within the housing system. Combi systems are therefore not permitted
- 2.** All aviary systems must:
 - i.** Provide continuous access to a littered scratch area
 - ii.** Provide access along the full length of the system
 - iii.** Have designated nest-box levels / tiers (i.e. not distributed throughout the system)
 - iv.** Provide ramps and / or alighting rails to aid movement through the system
- 3.** Stocking rates must not exceed 9 birds / m²; calculations must exclude nest box (including nest box tops) and outdoor areas
- 4.** Colony sizes must not exceed 6000 birds
- 5.** All hens must have free access to a well maintained litter area, comprising at least one third of the floor area, enabling dustbathing, scratching and foraging behaviours
- 6.** Raised perches must be provided at a minimum of 15cm per bird to enable all hens to roost at night without disturbance
- 7.** Nest boxes must be enclosed and draught-free, with a suitable flooring substrate, provided at a rate of at least 1m² per 120 birds
- 8.** Pecking enrichments - preferably edible and / or destructible - must be provided for all hens to explore
- 9.** The design of the system must enable the stock keeper to easily observe and access all hens for the purpose of routine daily inspections
- 10.** Daytime lighting must be sufficient to enable proper inspection without needing to raise the lights
- 11.** Pullets must be raised in loose (non-cage) housing systems with similar complexity to the laying house, e.g. with litter access, opportunities for perching, ramp & tier use, acceptable stocking densities
- 12.** Forced molting (also known as induced molting) must be prohibited, or a clear timeframe set for its phase-out
- 13.** Where beak trimming is practiced, 'infrared beak trimming (IRBT) must be used, or where hot blade beak trimming is currently practiced, there must be a clear timeframe for its phase-out with welfare safeguards (e.g. training, supervision, equipment maintenance) in place

Strongly recommended criteria:

- 14.** The use of a wintergarden or veranda, provided as additional usable area, is recommended
- 15.** Live shackling should be prohibited, or a clear timeframe set for its phase-out



Rationale and further guidance on meeting the criteria

	Criteria	Rationale	Guidance
Essential Criteria			
1	It must not be possible to confine birds within the housing system. Combi systems are therefore not permitted	Combi systems are not compatible with cage-free production; they can readily be changed to a caged facility, compromising welfare and making it difficult for a farm assurance scheme to ensure compliance with cage-free requirements or policies. When operated as cage-free systems their design does not optimise welfare (see Criteria 2).	<i>The Humane League's Position on Hybrid or Combi Aviary systems.</i>
2	All aviary systems must: i. Provide continuous access to a littered scratch area ii. Provide access along the full length of the system iii. Have designated nest-box levels / tiers (i.e. not distributed throughout the system) iv. Provide ramps and / or alighting rails to aid movement through the system	Standards 2 i-iv are welfare-important aspects of aviary design, often absent from Combi systems. i. 'Continuous access' ensures hens are not confined within the system and have access to this welfare-critical resource (see Criteria 5) ii. Sections along the system can result in crowding, and an inability to escape unwanted attention & readily access resources (including water, feed) iii. Designated nest box tiers help to separate active and nesting hens, reducing disturbance of laying behaviour iv. Well designed ramps and alighting rails help to prevent injury as hens move through the system	These will be standard features of most commercially available aviary housing. THL can provide guidance on suitable aviary design. Criteria 2.ii - refers to the full length of the system within a colony, not the length of the whole house.
3	Stocking rates must not exceed 9 birds / m ² ; calculations must exclude nest box and outdoor areas	Limiting stocking density helps to ensure birds are able to carry out their normal behavioural repertoire and move around the shed, accessing resources such as perches, feeders, drinkers and nest boxes with minimal difficulty or competition. Providing additional space, i.e. placing 5, 6 or 7 birds per square meter compared with 10 birds, has been shown to improve many environmental parameters of welfare importance, including litter and air quality, as well as some production parameters ¹	This is inline with EU requirements, but lower stocking rates may be beneficial, particularly in hot / tropical climates and / or where housing is naturally ventilated. Stocking rates should be calculated on the usable area of the house & must not include nest box space nor outdoor areas. Breed management guides provide further guidance on appropriate stocking rates at different temperatures, e.g. <i>Lohmann, Hendrix</i>

¹ Kang et al (2018), Effects of stock density on the laying performance, blood parameter, corticosterone, litter quality, gas emission and bone mineral density of laying hens in floor pens, Poultry Science, 00: 1-7



	Criteria	Rationale	Guidance
4	Colony sizes must not exceed 6000 birds	Colonies are smaller units within a larger flock that help to ensure even distribution and access to resources, whilst facilitating effective flock inspections	There may be multiple colonies in a flock. In free range systems / systems with outdoor access it is recommended that the number of colonies is limited to 3, i.e a maximum flock size of 18,000 birds. This ensures suitable access to range, e.g. by ensuring it's a suitable distance from the popholes.
5	All hens must have free access to a well maintained litter area, comprising at least one third of the floor area, enabling dustbathing, scratching and foraging behaviours	Dustbathing is considered a behavioural need. ² Good quality litter enables birds to perform some important priority behaviours including dust-bathing, pecking and scratching & encourages general activity. ³ Restricted access to litter ⁴ and poor quality litter ⁵ can result in frustration and redirected foraging behaviour (injurious feather pecking); lack of litter or poor quality litter is therefore a welfare concern.	Smaller litter particle size and deeper litter are shown to result in more complete dustbathing sequences. ⁶ Suitable materials include absorbent pellets, wood shavings, & once they've broken down, straw and woodchip. A greater depth of litter may also help to maintain it in a hygienic and friable state, by diluting faecal contamination. A minimum depth of 5cm at the start of housing, increasing to 10cm once birds are laying, is recommended.
6	Raised perches must be provided to enable all hens to roost at night without disturbance; a minimum of 15cm per bird	Perches are important for both daytime resting & nighttime roosting. During the day, perches allow birds to rest away from active birds, helping to reduce the risk of injurious pecking. At night, all birds will perch if given the opportunity to do so. Depending on bird size 15-18cm of perch space per bird is required. Birds provided with raised perches (15cm/bird) had reduced aggression, were less fearful & had improved body condition than those without perch access. ⁷ Well designed perches can help to minimise any risk of injury (see guidance) ^{8,9}	Most commercially available aviary systems will provide sufficient accessible perches for all hens to roost at night. Where producers install their own perches (e.g. in floor systems), perches should: <ul style="list-style-type: none"> • Be 45-60cm from the floor or slats • Be fixed and not swinging • Have an angle of no more than 45 degrees to the next perch / landing surface • Be no more than 80cm to the next perch / landing surface • Have clear headroom of at least 45cm
7	Nest boxes must be enclosed and draught-free, with a suitable nesting substrate; at least 1m ² per 120 birds	Hens are highly motivated to lay their eggs in a private, secluded nesting location. ^{10,11}	Suitable nesting substrates include astroturf, rubber dimpled mats and clean straw

² Weeks, C.A. & Nicol, C.J., 2006. Behavioural needs, priorities and preferences of laying hens. *World's Poultry Science Journal*, 62, pp297-308

³ Rodenburg, T.B., Tuytens, F.A.M. & Sonck, B., 2005. Welfare, Health and Hygiene of Laying Hens Housed in Furnished Cages and in Alternative Housing Systems. *Journal of Applied Animal Welfare Science*, 8(3), pp.211-226.

⁴ Nicol, C.J., Potzsch, C., Lewis, K. & Green, L.E., 2003. Matched concurrent case-control study of risk factors for feather pecking in hens on freerange commercial farms in the UK. *British Poultry Science* 44 (4), pp.515-523.

⁵ Green, L.E., Lewis, K., Kimpton, A. & Nicol, C.J., 2000. Cross-sectional study of the prevalence of feather pecking in laying hens in alternative systems and its associations with management and disease. *Veterinary Record* 147, pp.233-238

⁶ Moesta A., Knierim U., Briese A. & Hartung J., 2008. The effect of litter condition and depth on the suitability of wood shavings for dust-bathing behaviour. *Applied Animal Behaviour Science*, 115, pp.160-170

⁷ Donaldson, C.J. & O'Connell, N.E., 2012. The influence of access to aerial perches on fearfulness, social behaviour and production parameters in free-range laying hens. *Applied Animal Welfare Science*, 142, pp.51-60

⁸ Struelens, E., and Tuytens, F. A. M. (2009) Effects of perch design on behaviour and health of laying hens, *Animal Welfare*, 18: 533 – 538

⁹ European Food Safety Authority (2015) Scientific Opinion on welfare aspects of the use of perches for laying hens. EFSA. Italy.

¹⁰ Follensbee, M.E., Duncan, I.J.H. & Widowski, T.M., 1992. Quantifying nesting motivation of domestic hens. *Journal of Animal Science*, 70 (Suppl.1), pp.164.

¹¹ Cooper, J.J. & Appleby, M.C., 2003. The value of environmental resources to domestic hens: a comparison of the work-rate for food and for nests as a function of time. *Animal Welfare*, 12, pp.39-52.

	Criteria	Rationale	Guidance
8	Pecking enrichments - preferably edible and / or destructible - must be provided for all hens to explore	<p>Environmental enrichment improves health and welfare by encouraging activity and decreasing the risk of injurious feather pecking.¹² Manipulable or destructible enrichment has been shown to be particularly beneficial in helping minimise injurious feather pecking.¹³</p> <p>A greater range and prevalence of environmental enrichments helps to create a more stimulating environment.</p>	<p>Whole small straw bales added to the litter area, suspended nets filled with straw, hay, alfalfa blocks, egg trays or other similar safe & destructible materials, purpose made pecking blocks, brassicas and knotted rope / string have been shown to be effective in practice.</p> <p>As well as providing foraging opportunities, adding straw or hay bales to the littered area can also help to improve litter quality and provide raised areas for resting & refuge.¹⁴</p> <p>Stock keepers should be able to recognise signs of injurious feather pecking and be knowledgeable regarding its prevention. See featherwel.org</p>
9	The design of the system must enable the stock keeper to easily observe and access all hens for the purpose of routine daily inspections	<p>Regular, thorough inspections by competent stock-keepers helps to quickly identify and address welfare concerns, and prevent them from becoming worse. This requires hens to be both visible and accessible to the stock-keeper & for inspections to be a formal part of daily management routine.</p> <p>Regular human contact, e.g. via calm flock inspections, is shown to reduce fear and improve production.^{15,16}</p>	<p>System design should enable the stockkeeper to access any hen requiring attention and thus very high systems (4+ tiers) and / or systems without integrated walkways are not suitable. THL is able to provide further guidance on specific systems.</p> <p>Stock keepers should be knowledgeable regarding hen behaviour and be able to spot the signs of sick / ailing hens</p> <p>Lighting should be a minimum of 10 Lux for hens to be easily visible.</p> <p>It is recommended that flock inspections are carried out at least twice each day.</p>
10	Daytime lighting must be sufficient to enable proper inspection without needing to raise the lights	<p>Raising the lights during inspections has been identified as a risk for the development of injurious pecking.</p> <p>Feeding and exercise are increased in brighter conditions^{17,18} whilst lower lighting levels are preferred for resting (perching) and preening behaviour.¹⁹</p>	<p>10 Lux throughout the house should be sufficient to enable inspections and be acceptable for daytime perching and preening behaviours.</p> <p>20 lux is more appropriate in 'activity' areas of the house, such as the scratch and feed areas</p> <p>Daytime lighting should be provided for a minimum of 8 continuous hours. A continuous dark period of at least 6 hours should be provided.</p>

¹² FeatherWel (2013) *Improving Feather Cover: A guide to reducing the risk of injurious pecking occurring in non-cage laying hens*. University of Bristol.

¹³ <https://www.sciencedirect.com/science/article/pii/S0168159114002573>

¹⁴ FeatherWel (2013) *Improving Feather Cover: A guide to reducing the risk of injurious pecking occurring in non-cage laying hens*. University of Bristol.

¹⁵ Barnett, J.L., Hensworth, P.H., Hennessy, D.P., McCallum, T.H. and Newman, E.A. (1994), *The effects of modifying the amount of human contact on behavioural, physiological and production responses of laying hens*, *Applied Animal Behaviour Science*, 41: 87-100

¹⁶ Jones, R.B. and Waddington, D. (1992) *Modification of fear in domestic chicks, Gallus gallus domesticus, via regular handling and early environmental enrichment*, *Animal Behaviour*. 43: 1021-1033

¹⁷ Boschouwers, F.M.G. & Nicaise, E., 1993. *Artificial light sources and their influences on physical activity and expenditure of laying hens*. *British Poultry Science*, 34, pp.11-19

¹⁸ Prescott, N.B. and Wathes, C.M. (2002) *Preference and motivation of laying hens to eat under different illuminances and the effect of illuminance on eating behaviour*, *British Poultry Science*, 43: 190-195

¹⁹ Davis, N.J., Prescott, N.B., Savory, C.J. & Wathes, C.M. 1999. *Preference of growing fowls for different light intensities in relation to age, strain and behaviour*. *Animal Welfare*, 8, pp. 193-203

	Criteria	Rationale	Guidance
11	Pullets must be raised in loose housing systems with similar complexity to the laying house, e.g. with litter access, opportunities for perching, ramp & tier use, acceptable stocking densities	<p>It is beneficial for pullets to be raised in housing systems similar to those they will experience during lay as it can help to:</p> <ul style="list-style-type: none"> • Reduce fearfulness • prevent the development of injurious feather pecking in adult bird • improve bird ability to navigate 3 dimensional living spaces, reducing poor landings & the risk of fractures • Reduce the incidence of floor eggs <p>See²⁰ for a comprehensive review</p>	RSPCA welfare standards for pullets provide full detail of appropriate rearing conditions
12	Forced molting (also known as induced molting) must be prohibited, or a clear timeframe set for its phase-out	<p>Feed withdrawal methods cause the most severe welfare insult, although all commercially practiced methods are associated with some indicators of reduced welfare, including: weight loss, loss of the feathers, increased aggression, increased feather pecking, a physiological stress response & increased mortality.²¹</p> <p>Even where molting is induced using low nutrient but freely available feed, birds still appear to experience hunger.^{22,23}</p>	Extended laying cycles (commonly 80-90 weeks, e.g. in the UK's predominantly brown layer flock), should help to improve the financial viability of single cycle egg production and thus reduce the need to practice induced molting ²³
13	Where beak trimming is practiced, IRBT must be used, or where hot blade beak trimming is currently practiced, there must be a clear timeframe for its phase-out with welfare safeguards (e.g. training, supervision, equipment maintenance) in place	<p>Hot blade beak trimming causes both acute and chronic pain, changes the morphology of the beak & subsequent beak-related behaviours, is difficult to apply consistently & comes with a risk of infection. Hot blade beak trimming (HRBT) is performed on-farm & is therefore associated with handling stress.</p> <p>Infrared beak trimming also affects the beak morphology, but is not associated with chronic pain, it removes a consistent portion of the beak & does not leave an open wound that risks infection. It is performed at the hatchery, usually alongside injected vaccinations & therefore reduces the need for additional handling.</p> <p>IRBT is therefore the preferred method of beak trimming.</p>	<p>RSPCA welfare standards for laying hens provides guidance on welfare safeguards following HBBT (NB, it is only permitted in emergency circumstances, as required by law).</p> <p>IRBT does not address the underlying welfare problems that result in injurious feather pecking (IP) behaviour. Addressing these underlying problems with good housing, husbandry and genetics in order to reduce and prevent IP behaviour, should therefore be a priority. Until IP is sufficiently controlled, IRBT should be the only acceptable method of beak trimming.</p>

²⁰ Janczak A and Riber A. 2015. Review of rearing-related factors affecting the welfare of laying hens. *Poultry Science* 94:1454-1469.

²¹ Glatz, P.C & Tilbrook, A.J. 2020. Welfare issues associated with molting of laying hens. *Animal Production Science* <https://doi.org/10.1071/AN19700>.

²² Koch, J. M., D. C. Lay, K. A. McMunn, J. S. Moritz, and M. E. Wilson. 2007. Motivation of hens to obtain feed during a molt induced by feed withdrawal, wheat middlings, or melengestrol acetate. *Poultry Science* 86:614-620

²³ Nicol CJ, Bouwsema J, Caplen G, Davies AC, Hockenhull J, Lambton SL, Lines JA, Mullan S, Weeks CA (2017) 'Farmed bird welfare science review.' (Department of Economic Development, Jobs, Transport and Resources: Melbourne, Vic. Australia)



	Criteria	Rationale	Guidance
Strongly Recommended Criteria			
14	The use of wintergardens / verandas, provided as additional usable area	Verandas provide a wealth of welfare and management benefits ²⁴ , including: <ul style="list-style-type: none"> • Provision of natural light and ventilation • Additional space • Additional environmental choice • Additional dustbathing and foraging opportunities • In houses with outdoor access they: <ul style="list-style-type: none"> • Encourage ranging • Help to maintain litter quality in the main shed • Provide protection from bad weather 	
15	Live shackling should be prohibited, or a clear timeframe set for its phase-out	Live shackling causes pain and distress. In its 2004 report, EFSA states: <i>Since welfare is poor when the shackling line and water bath electrical stunning method is used, and birds are occasionally not stunned before slaughter, the method should be replaced as soon as possible.</i> ²⁵	

Definitions

AVIARY

Multi-level housing, providing raised tiers with food, water, perches and nest boxes & including manure belts. Sometimes called 'multi-tier' housing. See [Big Dutchman](#), [Jansen](#), [Potters](#) and [Vencomatic](#) examples

COLONY

A smaller group of birds within a larger flock. Colonies within a flock are separated by internal house divisions

COMBI SYSTEM

A system which can be operated as either an enriched cage or an aviary system. Note: Due to design limitations, combi systems are not considered acceptable for cage-free production.

FLOCK

The number of birds living in a single house (or in multiple, smaller mobile houses, accessing the same outdoor range area)

FLOOR SYSTEM

Sometimes referred to as flat-deck systems; multiple levels are not provided, although a raised slatted area housing feeders, drinkers and nest boxes, is common. Manure is often stored in a manure pit which is emptied at the end of the flock cycle.

WINTERGARDEN / VERANDA

An additional covered scratch (littered) area, providing access to natural light & ventilation. Often constructed with mesh sides. [Examples are provided in the FeatherWel Management Guide](#)

LOOSE HOUSING

Non-cage housing systems

INDUCED / FORCED MOLTING

Sometimes referred to as forced moulting. Birds are artificially induced to molt simultaneously towards the end of a laying cycle, using feed and/or water withdrawal, or a modified feed.

²⁴ https://www.featherwel.org/featherwel/Portals/3/Documents/advice_guide_V1.2-May-2013.pdf

²⁵ The EFSA Journal (2004), 45, 1-29, Welfare aspects of the main systems of stunning and killing the main commercial species of animals

