

The Housing of Egg-Laying Hens

Modern domestic strains of hens come from Jungle Fowl and we know that in the wild, hens would build a nest for their egg, forage for food and perch at night. While modern strains of hen are different from their ancestors, they still retain many of the behaviour patterns of their ancestors and are strongly motivated to perform those behaviours.

The various types of housing systems used to raise egg-laying hens on-farm are listed below. The method of housing strongly impacts a bird's ability to perform natural behaviours and therefore impacts on their welfare. When we consider the various methods of housing, it can be useful to evaluate them in the context of what we know to be the natural behaviours of egg-laying hens.

Cage Systems

Conventional Battery Cages

These systems house egg-laying hens in small barren cages. These housing systems provide access to feed and water and droppings fall through the wire cage floor onto a belt or into a pit for disposal. The space provided for each hen varies across farms but generally 3 or more birds are housed in each cage and cages are stacked on top of each other.

Access to food and water is good and consistent in these systems with automated units providing adequate food and water for the birds throughout the laying cycle.

Thermal comfort: Barn temperatures can be well-maintained so that birds are in an environment that consistently has appropriate temperatures.

Physical comfort: There is broad consensus that the physical comfort of birds in conventional battery cages poor. For example, hens can experience chronic pain associated with injuries to their feet caused by standing on the wire floor of the cages. Another source of pain may come at the time of catching and transport: studies show that hens in battery cages have weak bones, due in part to lack of movement and are therefore more susceptible to bone fractures at catching and during transport.

Emotional well-being: Birds in battery cages are less likely to experience fear because they are in a small stable group of hens and predation is not an issue. However, much research suggests that hens in conventional cages experience severe frustration due to their confinement in these barren environments and their inability to nest while laying an egg. When we observe modern strains of hens around the time of egg-laying, we see behaviours symptomatic of frustration, including pacing and increased aggression.

Ability to perform natural behaviours: These cages severely restrict freedom of movement – the cages are barren and too small to allow the hens to perform important movements they are strongly motivated to perform, including grooming, wing flapping, perching and nest building.



Enriched/Modified/Furnished Cages

These systems are diverse in their design and may provide:

- more space per hen than a conventional battery cage
- resources that enable hens to perform natural behaviours (e.g. nesting and perching)

In the European Union (EU), the conventional battery cage will be phased out by 2012, and egg producers must raise their hens in either a free range, free run or enriched cage system. In the EU, the enriched cages must, at a minimum, provide 750 cm² of floor space per bird (compared to 432cm² required in Canada), a nest, litter, perches and suitable claw shortening devices.



Access to food and water: Is good and consistent in enriched cages. It is recommended that feed be provided in ground form rather than pelleted form, in order to encourage food-directed pecking behaviour and to decrease the likelihood of feather pecking.

Thermal comfort: Barn temperatures can be maintained so that birds are in an environment that has appropriate temperatures throughout their laying cycle.

Physical comfort: The enriched cage will still restrict a hen's ability to roam freely, but depending on the space provided per bird, they will be able to flap their wings and preen. If the flooring is litter rather than wire, the birds will not suffer from the pain associated with foot injuries. However, the litter must be properly maintained so that it doesn't cause skin problems, such as foot pad dermatitis.

Emotional well-being: Variable. If the enriched cage contains sufficient nest boxes and a suitable nest building substrate the birds will be able to fulfill this behaviour and will not feel frustrated at the time of egg-laying. Birds are less likely to experience fear in these enriched cages because they are in a smaller stable group of hens and will not be fearful of predation.

Ability to perform natural behaviours: Variable. If the enriched cage has a perch and dust bathing area, the hens will be able to perform those behaviours provided also that there is adequate space and adequate resources so that dominant birds do not guard the resources preventing others in the group from accessing them.

Cage-Free Systems

*Free Run*¹

Hens are raised free from battery cages and are kept entirely indoors on a barn floor. Free run housing that provides deep-bedded sawdust (or other fibrous bedding material) is often referred to as a deep-litter system. Free run housing does not necessarily provide more space per hen than conventional battery cages, and is not required to provide resources such as nest boxes, perches, or a substrate for dust-bathing. While free run hens have no access to the outdoors, the barns may be designed to allow natural light to enter.



¹ The "free run" label that may be seen on some broiler (meat) chicken can mislead consumers by suggesting that meat chickens are raised in cages. In fact, no meat chickens are raised in cages; they are either free run or free range.

Access to food and water: Is good and consistent in these systems as long as a sufficient access is provided in each cage. It is recommended that feed be provided in ground form rather than pelleted form, in order to encourage food-directed pecking behaviour and to decrease the likelihood of feather-pecking.

Thermal comfort: Barn temperatures can be maintained so that birds are in an environment that has appropriate temperatures throughout their laying cycle.

Physical comfort: Variable, depending on the space provided per bird. If the litter is well maintained, painful foot injuries will not be a problem.

Emotional well-being: As the birds in a flock establish their hierarchy, some may be aggressive which may cause fearfulness in some birds; therefore it is important to provide the hens with escape areas.

Ability to perform natural behaviours: Well-managed free run facilities with appropriate stocking densities allow the hens to roam freely in the barn and explore their surroundings. If these systems provide nest boxes, perches and dust bathing areas in sufficient quantity, the hens in the flock will be able to fulfill their full range of natural behaviours. Studies show that birds who use perches regularly have stronger bones and are therefore less likely to suffer from painful injuries common in their battery-caged counterparts.

Free Range

Hens are free from battery cages and are allowed access to the outside. As with free-run housing, free-range systems do not necessarily provide more space than conventional battery cages, and are not required to provide resources such as nest boxes, perches, or a substrate for dust-bathing.



Access to food and water: Adequate feeders and drinkers must be available to the flock to ensure that all birds have good access. It is recommended that feed be provided in ground form rather than pelleted form, in order to encourage food-directed pecking behaviour and to decrease the likelihood of feather pecking.

Thermal comfort: Will be variable in these systems; however, since hens can choose whether to be indoors or outdoors, their thermal comfort will likely be good. Flocks with access to the outdoors also require shade during the summer as well as shelter from rain.

Physical comfort: Variable depending on the space provided per bird, as per “free run” above.

Emotional well-being: As the birds in a flock establish their hierarchy, some may be aggressive which may cause fearfulness in some birds and providing escape areas will help alleviate that. Any flock with access to the outside must be protected from external threats such as predators.

Ability to perform natural behaviours: As with “free run” above. Access to the outside also gives the birds the opportunity to forage for food as they like.

Third-Party Certification – Your Only True Assurance

Producers who label their eggs as "free run" or "free range" may well be providing a high level of welfare, if the systems are managed well. However, if the farms have not been certified by an independent body, then these farms have not been inspected, which means that consumers cannot be sure that high standards of care are met.



Certified Organic eggs come from hens in free range production systems. In British Columbia, organic farms are inspected and certified by the Certified Organic Associations of British Columbia (COABC), ProCert or Quality Assurance International (QAI). At minimum, each of these certification programs assures adherence to the Canadian Organic Standard, although the inspection protocols may differ between certification bodies.

SPCA Certified farms can raise their hens in either free range or free run systems provided they meet all the requirements set out in the standards, including space requirements, good ventilation and the provision of environmental enrichments such as perches, nest boxes and dust bathing areas. SPCA Certified farms must also have a Veterinary Health Plan in place to ensure birds are maintained in a healthy state.



See below for more details of the space provisions required by SPCA Certified, Certified Organic and various other systems.

Comparison of Space Provisions for Adult Laying Hens in Canada, Europe and the USA

	Caged				Caged or Cage-Free	Cage-Free	
Jurisdiction	Canada	USA (United Egg Producers)	McDonald's USA	Burger King USA	European Union (2003/2012) ¹	SPCA Certified	Certified Organic (Canada)
Space Allowance (cm ² /hen)	432	432	464	484	550 / 750	1111	1667

¹ The conventional battery cage is to be phased out by 2012 in Europe. These space provisions apply to enriched cages, free range and free run systems.