



# Battery Cages and the Welfare of Hens in Canada

- a summary of the scientific literature -

## About the Battery Cage

- o The battery cage system was introduced in the 1940's to produce the maximum number of eggs for the lowest possible price
  - This is achieved through space reduction and tight control of water, food, and light available
  - Genetic selection is also carried out to produce highly productive layers
- o Battery cages measure approximately 16" by 18" with sloping wire floors, stacked two to eight cages high
  - They provide about 450 cm<sup>2</sup> per bird, with five to seven birds in each cage<sup>1</sup>
- o Battery cages represent one of the worst manifestations of industrial farming<sup>2</sup> and inhibit almost all of chickens' natural behaviours

## Extent of Battery Cage Usage

- o In 2006, 26 million egg-laying hens were kept in battery cages in Canada<sup>3</sup>
- o The battery system produces 98% of Canada's 6.5 billion eggs each year
- o Worldwide, approximately 70-80% of eggs are from hens in battery cages

## Change in Policies

- o Over the past 20 years, there has been greater movement towards other forms of egg production in Europe<sup>4</sup>
  - In 1988, Sweden created the Animal Protection Act, which called for a phase-out of battery cages<sup>5</sup>
  - In 1991, Switzerland banned the use of all cages<sup>6</sup>
  - In 1994, the Netherlands created legislation to ban battery cages<sup>7</sup>
  - In 1999, the European Union enacted a ban on battery cages which will come into effect in 2012<sup>4</sup>
- o In the European Union, labelling regulations have been changed
  - Only three terms will be permitted on eggs: "Eggs from caged hens", "Barn eggs", and "Free-range hens"<sup>2</sup>

## Hen Behaviour and Environment

- o **Crowding**
  - The area occupied by an average hen at rest is approximately 600 cm<sup>2</sup><sup>8</sup>. Hens require at least 750cm<sup>2</sup> to create any "free space"<sup>8</sup> and need 2000cm<sup>2</sup> to flap their wings<sup>12</sup>
  - Hens in Canada are allocated between 432 cm<sup>2</sup> and 483 cm<sup>2</sup><sup>9</sup>
  - Hens frequently overlap and have their feathers compressed either by the cage or other birds
  - When victimized, birds have no areas to escape to and avoid feather pecking<sup>10</sup>
- o **Nesting**
  - Under natural conditions, hens place a greater importance on gaining access to a discrete nest site than gaining access to food<sup>11</sup>
  - Hens exhibit extreme frustration during the pre-laying period when deprived of nests<sup>8, 12</sup>
    - This frustration manifests itself through various behaviours, including feather pecking and has been concluded to cause acute pain in egg-laying hens<sup>12</sup>
- o **Flooring**
  - Battery cages have slanted wire floors
    - The slope ensures that a laid egg will roll into the collection tray
    - The wire floors allow hen feces to pass through the floor onto a conveyor belt below to be removed. In stacked cages, feces can fall onto the hens below.
  - Wire floors are responsible for some foot ailments seen in hens such as lesions, fissures and hyperkeratosis<sup>8</sup>

<sup>1</sup> B.C. Egg Marketing Board Standing Order, Re. Feb. 2002. Sect. 7.2 and 16.1

<sup>2</sup> Stevenson, P. 2004. European Union law and the welfare of farm animals (in International Animal Welfare Law Conference 2004, edited by Favre, D. and Hancock, K.)

<sup>3</sup> Agriculture and Agri-food Canada. [http://www.agr.gc.ca/misb/aisd/poultry/gleg\\_e.htm](http://www.agr.gc.ca/misb/aisd/poultry/gleg_e.htm)

<sup>4</sup> Savory, C.J. 2004. Laying hen welfare standards: a classic case of 'power to the people'. *Animal Welfare*. 13:S153-158.

<sup>5</sup> Keeling, L. and Svedberg, J. 1999. Legislation banning conventional battery cages in Sweden and subsequent phase-out programme. Swedish University of Agricultural Sciences, Skara, Sweden.

<sup>6</sup> Bell, P.W. 2001. Travel report – 6<sup>th</sup> European symposium on poultry welfare, Switzerland, September 2001. Rural Industries Research and Development Corporation.

<sup>7</sup> Preece, R. and Chamberlain, L. 1993. *Animal Welfare and Human Values*. Waterloo, Ontario: Wilfrid Laurier University Press.

<sup>8</sup> Appleby, M.C. and Hughes, B.O. 1991. Welfare of laying hens in cages and alternative systems: environmental, physical, and behavioural aspects. *World's Poultry Science Journal*. 47: 109-127

<sup>9</sup> Canadian Agri-Food Research Council. 2003. Recommended code of practice for the care and handling of pullets, layers and spent fowl, Sect. 4.1.

<sup>10</sup> Freire, R, Wilkins, L.J, Short, F. and Nicol, C.J. 2003. Behaviour and welfare of individual laying hens in a non-cage. *British Poultry Science*. 44:22-29.

<sup>11</sup> Cooper, J.J and 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*. 12:39-52.

<sup>12</sup> Baxter, M.R. 1994. The welfare problems of laying hens in battery cages. *Veterinary Record*. 134:614-619.

- o **Foraging**
  - Under natural conditions, fowl spend most of their daytime hours foraging for food<sup>8</sup>
  - Bantam hens were observed making over 14,000 pecks at the ground over a 10 hour period while foraging<sup>13</sup>
  - When deprived of litter, hens often redirect some of their ground-pecking toward the feathers of other hens
  - Instead of foraging, battery hens are allocated 10 cm per bird of feeding space in a trough outside their cage, accessed only by pushing their heads through metal bars<sup>9</sup>
    - 10 cm of feeding space is inadequate and may result in aggression and cannibalism if access to food were somehow limited<sup>8</sup>
- o **Feather pecking**
  - This is often a result of genetic and environmental factors, and a frustration response to behavioural restrictions such as crowding or lack of ability to nest, perch or forage naturally
  - Open wounds caused by pecking are vulnerable to infection and can trigger a cannibalistic response in other hens. Cannibalism is a major cause of death in battery operations<sup>8</sup>

### Physical Ailments

- o **Feathers**
  - Feathers are important for thermoregulation and protection from injury in birds
  - Most feather loss is due to feather pecking, with some loss due to abrasion<sup>8</sup>
  - The skin of birds is highly sensitive and delicate, so slight abrasions can lead to excessive bleeding<sup>14</sup>
  - Extensive feather loss usually indicates major physiological or behavioural stress, and can greatly increase the danger of injury to exposed skin
- o **Feet**
  - Foot and claw damage is a major problem in battery-caged hens
  - Examples include lesions, fissures, hyperkeratosis on the feet and twisted, broken or overgrown claws<sup>8</sup>
- o **Bones**
  - Confinement in battery cages has been shown to significantly reduce bone strength in hens<sup>12</sup>
  - Hens must be able to move normally to maintain proper bone strength. This is impossible in battery cages<sup>12</sup>
  - Most caged hens suffer some kind of painful bone fracture during their first laying cycle<sup>15</sup>
    - Low bone strength is common in spent hens from cages, with 30 to 50% of birds suffering broken bones during catching, handling and transportation<sup>8</sup>
  - Hens are susceptible to structural bone osteoporosis due to their high egg production<sup>15</sup>
    - In one study, 80 to 90% of battery-caged birds had osteoporosis<sup>15</sup>

### Industry Practices

- o **Debeaking**
  - To control outbreaks of feather pecking and cannibalism, many chickens are debeaked using a hot blade or laser shortly after hatching<sup>8</sup>
  - A chicken's beak is highly innervated and used for various functions including foraging, preening and defence<sup>15</sup>
    - When the beak is damaged, chronic pain results<sup>15</sup>
- o **Forced moulting**
  - "Moulting" is a natural process that usually takes 16 weeks
    - Under natural conditions, hens stop laying and shed their feathers in the fall
    - When their feathers have re-grown, the hens begin laying eggs again
  - Forced moulting is a procedure where hens are shocked into an extra laying session after their normal cycle is completed
    - This is done by depriving the hens of food, light and stimuli for up to 12 days and water for three days, causing a change in hormone levels that quickly ends the laying cycle
    - The shock of these changes forces hens into a moult where old feathers are pushed out
    - When this is complete and feathers have started to regrow, a new laying cycle begins<sup>16</sup>
  - Forced moulting shortens a normal moulting period from 16 weeks to eight, and is traumatic to hens, causing severe stress and suffering, susceptibility to disease and mortality<sup>17</sup>
  - Despite being banned in most of Europe, forced moulting is still legal in Canada when done following procedures of the Commercial Moulting Programme<sup>1</sup>

<sup>13</sup> Hughes, BO and Channing, CE. 1998. Effect of restricting access to litter trays on their use by caged laying hens. Applied Animal Behaviour Science. 56:37-45

<sup>14</sup> Proctor, NS and Lynch, PJ. Manual of Ornithology. Yale University Press. 1995.

<sup>15</sup> Webster, AB and Hurnik, JF. 1991. Breeding and Genetics. Poultry Science. 70:421-428.

<sup>16</sup> Rollins, BE. Farm Animal Welfare: Social, Bioethical, and Research Issues. Ames: Iowa State University Press, 1995.

<sup>17</sup> Farm Sanctuary, 2004. The welfare of hens in battery cages: A summary of the scientific evidence.

[http://www.freetheanimals.org/bc\\_evidence.html](http://www.freetheanimals.org/bc_evidence.html)