



Scientists and Experts on Battery Cages and Laying Hen Welfare

An extensive body of scientific evidence confirms that birds confined in barren battery cages suffer immensely.* Compiled below are statements by leading welfare scientists and experts.

Dr. Ian Duncan

Department of Animal and Poultry Science, University of Guelph, Canada

- “Battery cages for laying hens have been shown (by me and others) to cause extreme frustration particularly when the hen wants to lay an egg. Battery cages are being phased out in Europe and other more humane husbandry systems are being developed.”¹
- “Hens in battery cages are prevented from performing several natural behaviour patterns....The biggest source of frustration is undoubtedly the lack of nesting opportunity.”²
- “The lack of space in battery cages reduces welfare by preventing hens from adopting certain postures—such as an erect posture with the head raised—and performing particular behaviors—such as wing-flapping.”³
- “[T]raditional battery cages are not sufficiently high to allow hens to adopt the standing alert posture that is very common in their repertoire.”⁴
- “In addition to restricting certain behavior, the lack of space in a cage means that hens are crowded together. All the indications are that, at commercial cage densities used in the North America (300-350 cm² per bird in the United States and 450 cm² in Canada), welfare is decreased.”⁵ [Note: 300 to 350 square centimeters approximates 46.5 to 54 square inches, and 450 square centimeters converts to 70 square inches, less than a single 8.5”x11” piece of paper (93.5 in²).]
- “[T]he difficulty of inspecting cages means that the welfare of the birds is at some risk.”⁶

Dr. David Fraser, *Animal Welfare Program, University of British Columbia, Canada*

Dr. Joy Mench, *Department of Animal Science at the University of California, Davis*

Dr. Suzanne Millman, *Ontario Veterinary College at the University of Guelph, Canada*

- “The recommended space allowance for laying hens in some countries is 60-80 square inches per hen, barely enough for the hen to turn around and not enough for her to perform normal comfort behaviors; however, many hens are allowed less than even that meager amount.”⁷

Dr. Joy Mench

Department of Animal Science at the University of California, Davis

- “Battery cages provide an inadequate environment for nesting, lacking both sites which fit these criteria

* See “An HSUS Report: A Comparison of the Welfare of Hens in Battery Cages and Alternative Systems” at www.humanesociety.org/assets/pdfs/farm/hsus-a-comparison-of-the-welfare-of-hens-in-battery-cages-and-alternative-systems.pdf

[concealment and separation from other birds] as well as substrates for nest-building. Hens housed in battery cages display agitated pacing and escape behaviors which last for 2 to 4 hours prior to oviposition [laying eggs].”⁸

Dr. Michael Appleby, *Formerly with the Institute of Ecology and Resource Management at the University of Edinburgh, United Kingdom*

Dr. Joy Mench, *Department of Animal Science at the University of California, Davis* **Dr. Barry Hughes**, *Roslin Institute, United Kingdom*

- “Comfort movements such as preening, dust and water bathing, wing flapping and feather ruffling are important to keep the plumage in good condition. The incidence of these behaviours is influenced by availability of space and substrates. They decrease with crowding and are much less frequent in cages.”⁹
- “Even in small-scale terms, measurement of the area occupied by hens has shown that conventional battery cages must restrict freedom of movement....No other poultry production system is so restrictive of movement as battery cages.”¹⁰
- “Frustration of nesting is a severe behavioural problem for hens in cages.”¹¹
- “The Five Freedoms...include freedom to express normal behaviour, and poultry may be frustrated in this expression in various ways. Indeed, when hens are stocked at typical commercial densities in conventional laying cages, they are not afforded even an earlier, much more modest list of five freedoms. The Brambell Report...stated that ‘an animal should at least have sufficient freedom of movement to be able without difficulty to turn around, groom itself, get up, lie down and stretch its limbs.’ Dawkins and Hardie (1989) demonstrated that hens in laying cages do not have such freedom...Furthermore, cages prevent or restrict pre-laying behaviour, comfort behaviour, feeding and foraging, and dust bathing. Inability to perform normal pre-laying behaviour...is generally regarded as one of the most important problems for the welfare of hens in cages.”¹²
- “Conventional cages for laying hens have pervasive problems for welfare.”¹³

Dr. Michael Baxter

Formerly with the Agricultural Engineering Unit, Scottish Agricultural College

- “The space available in a battery cage does not allow hens even to stand still in the way they would in a more spacious environment. Some behaviours are completely inhibited by confinement in a cage causing a progressive accumulation of motivation to perform the behaviours.”¹⁴
- “When crowded together this regulatory system breaks down and the hens appear to be in a chronic state of social stress, perpetually trying to get away from their cagemates, not able to express dominance relations by means of spacing and not even able to resolve social conflict by means of aggression.”¹⁵
- “[T]he frustration of nesting motivation is likely to cause significant suffering to the hen during the prelaying period every day.”¹⁶
- “Hens without access to perches may have more welfare problems resulting from increased aggression, reduced bone strength, impaired foot condition and higher feather loss.”¹⁷
- “The fact that hens are restricted from exercising to such an extent that they are unable to maintain the strength of their bones is probably the greatest single indictment of the battery cage. The increased incidence of bone breakage which results is a serious welfare insult.”¹⁸

Dr. John Webster

Department of Clinical Veterinary Science, University of Bristol, England

- “There is good evidence that laying hens experience frustration in the barren cage; most especially, the

frustration associated with their inability to select a suitable nesting site prior to laying their daily egg.”¹⁹

- “[T]he unenriched battery cage simply does not meet the physiological and behavioural requirements of the laying hen, which makes any quibbling about minimum requirements for floor space superfluous.”²⁰
- “The main criticism of the unenriched cage, dating back to the Brambell report (Brambell, 1965) is that imposes an unacceptably severe restriction on the hens’ ability to meet their behavioural needs for grooming, stretching, wing-flapping, nest building, and litter bathing. Extreme confinement in barren wire cages also predisposes to external injuries to feet and feathers, and exacerbates the development of osteoporosis, leading to bone fractures and chronic pain.”²¹

European Commission’s Scientific Veterinary Committee

- “Battery cage systems provide a barren environment for the birds....It is clear that because of its small size and its barrenness, the battery cage as used at present has inherent severe disadvantages for the welfare of hens.”²²

Dr. Konrad Lorenz

Nobel Prize winner, author, and considered the father of modern ethology

- “The worst torture to which a battery hen is exposed is the inability to retire somewhere for the laying act. For the person who knows something about animals it is truly heart-rending to watch how a chicken tries again and again to crawl beneath her fellow-cage mates to search there in vain for cover.”²³

Dr. Marian Stamp Dawkins

Department of Zoology, University of Oxford, England

- “Chickens in battery cages which have wire floors and no loose substrate for the birds to scratch and dust bathe in, can often be seen to go through all the motions of having a dust bath. They squat down, raise their feathers, and rub themselves against the floor and flick imaginary dust from their backs. They behave as though real dust were being moved through their feathers, but there is nothing really there. If such dust-deprived birds are eventually given access to something in which they can have a real dust bath, like wood shavings or peat, they go in for a complete orgy of dust bathing. They do it over and over again, apparently making up for lost time...”²⁴

Dr. Desmond Morris

Zoologist, author, and animal behaviourist

- “Anyone who has studied the social life of birds carefully will know that theirs is a subtle and complex world, where food and water are only a small part of their behavioural needs. The brain of each bird is programmed with a complicated set of drives and responses that set it on the path to a life full of special territorial, nesting, roosting, grooming, parental, aggressive and sexual activities in addition to the simple feeding behaviour. All these are denied the battery hens.”²⁵

Dr. Klaus Vestergaard

Department of Animal Science and Animal Health, Royal Veterinary and Agricultural University, Denmark

- “[T]he scientific results that have been accumulating over the last twelve years have supported the view that the battery hen suffers unnecessarily and that the causes are inherent in the battery cage system. The

task during the years to come is therefore primarily to develop and test good alternative systems, rather than trying to prove or disprove drawbacks and benefits of battery cage systems.”²⁶

Justice Rodger Bell

Judge on the High Court of Justice, United Kingdom

- “I conclude that the battery system as described to me is cruel in respect of the almost total restraint of the birds and the incidence of broken bones when they are taken for slaughter.”²⁷

Dr. Lesley Rogers

Professor of Zoology, University of New England, Australia

- “Chickens in battery cages are cramped in overcrowded conditions. Apart from restricted movement, they have few or no opportunities for decision-making and control over their own lives...These are just some examples of the impoverishment of their environment. Others include abnormal levels of sensory or social stimulation caused by excessive tactile contact with cage mates and continuous auditory stimulation produced by the vocalizing of huge flocks housed in the same shed. Also, they have no access to dustbathing or nesting material.
Chickens experiencing such environmental conditions attempt to find ways to cope with them. Their behavioural repertoire becomes directed towards self or cage mates and takes on abnormal patterns, such as feather pecking or other stereotyped behaviours. These behaviours are used as indicators of stress in caged animals.”²⁸
- “In no way can these living conditions [battery cages] meet the demands of a complex nervous system designed to form a multitude of memories and make complex decisions.”²⁹

Dr. Bernard Rollin

Department of Animal Science, Colorado State University

- “Virtually all aspects of hen behavior are thwarted by battery cages: social behavior, nesting behavior, the ability to move and flap wings, dustbathing, space requirements, scratching for food, exercise, pecking at objects on the ground....The most obvious problem is lack of exercise and natural movement. Under free-range conditions, hens walk a great deal. Wing flapping, which is common in free-range animals, is also prevented in cages. Comfort behavior is likewise truncated, as is leg stretching and preening. Research has confirmed what common sense already knew—animals built to move must move.”³⁰
- “Wire floors inhibit the ability of hens to dustbathe and to scratch and also violate their known preference for litter before and during oviposition. Wire can also be responsible for soring and injury of feet and legs.”³¹
- “Battery cages are responsible for a variety of injuries, as birds are sometimes trapped in cages by the head and neck, body and wings, toes and claws, or other areas. In addition, steep floors can cause foot deformities, and wire mesh can lead to feather wear.”³²

Dr. R.B. Jones

Welfare Biology Group, Roslin Institute, Edinburgh, Scotland

- “Rearing chickens in impoverished environments leads to apathy, boredom, fear, and abnormal, often harmful behaviors....Despite this, they are often housed in barren or inappropriate environments that provide little to occupy their interests.”³³

C.C. Whitehead

Roslin Institute, Edinburgh, Scotland

- “Keeping birds in alternative husbandry systems that allow them more opportunity for exercise can markedly decrease the severity of osteoporosis.

¹ Duncan IJH. Letter dated June 25, 2003, to Dr. Nancy Halpern, New Jersey Department of Agriculture.

² Duncan IJH. 2001. The pros and cons of cages. *World's Poultry Science Journal* 57:385.

³ Duncan IJH. 1998. Thirty years of progress in animal welfare science. *Journal of Applied Animal Welfare Science* 1:151-4.

⁴ Duncan IJH. 2004. Welfare problems of poultry. In: Benson GJ and Rollin BE (eds.), *The Well-Being of Farm Animals: Challenges and Solutions* (Ames, IA: Blackwell, pp. 312).

⁵ *Ibid.*, 313.

⁶ Duncan IJH. 2001. *op. cit.*, 383.

⁷ Fraser D, Mench J, and Millman S. 2001. Farm animals and their welfare in 2000. In: *State of the Animals 2001* (Washington, D.C.: Humane Society Press, p. 93-4).

⁸ Mench J. 1992. The welfare of poultry in modern production systems. *Poultry Science Review* 4:112.

⁹ Appleby MC, Mench JA, and Hughes BO. 2004. *Poultry Behaviour and Welfare* (Wallingford, England: CABI Publishing, p. 46).

¹⁰ *Ibid.*, 60.

¹¹ *Ibid.*, 112.

¹² *Ibid.*, 140.

¹³ *Ibid.*, 161.

¹⁴ Baxter M. 1994. The welfare problems of laying hens in battery cages. *The Veterinary Record* 134:617.

¹⁵ *Ibid.*, 618.

¹⁶ *Ibid.*

¹⁷ *Ibid.*, 615.

¹⁸ *Ibid.*, 618.

¹⁹ Webster J. 2005. *Animal Welfare: Limping Towards Eden* (Oxford: Blackwell Publishing, p. 14).

²⁰ *Ibid.*, 120.

²¹ *Ibid.*, 121.

²² Scientific Veterinary Committee Animal Welfare Section. 1996. The welfare of laying hens. For the European Commission; Report nr Doc VI/B/II.2. europa.eu.int/comm/food/fs/sc/oldcomm4/out33_en.pdf, p. 109.

²³ Lorenz K. 1980. Animals are sentient beings: Konrad Lorenz on instinct and modern factory farming. *Der Spiegel*. November 17, 1980, Volume 34, No. 47, p. 264.

²⁴ Dawkins MS. 1998. *Through Our Eyes Only? The Search for Animal Consciousness* (Oxford: Oxford University Press, p. 154).

²⁵ Druce C and Lymbery P. 2002. *Outlawed in Europe: How America Is Falling Behind Europe in Farm Animal Welfare* (New York: Archimedean Press, p. 20).

²⁶ *Ibid.*, p. 21.

²⁷ Chief Justice Bell in Verdict Section 8, “The Rearing and Slaughtering of Animals,” McDonald libel case, The High Court, London, July 1997.

²⁸ 28. Rogers LJ. 1995. *The Development of Brain and Behaviour in the Chicken* (Wallingford, England: CABI Publishing, p. 219).

²⁹ *Ibid.*, 218.

³⁰ Rollin BE. 1995. *Farm Animal Welfare: Social, Bioethical, and Research Issues* (Ames, Iowa: Iowa State Press, p. 120).

³¹ *Ibid.*, 126.

³² *Ibid.*

³³ Jones RB. 2004. Environmental enrichment: the need for practical strategies to improve poultry welfare. In: Perry GC (ed.), *Welfare of the Laying Hen* (Cambridge, MA: CABI Publishing, 216).

The Humane Society of the United States is the nation's largest animal protection organization—backed by 11 million Americans, or one of every 28. For more than a half-century, The HSUS has been fighting for the protection of all animals through advocacy, education, and hands-on programs. Celebrating animals and confronting cruelty. On the Web at humanesociety.org.