

## Laying Hens

- [Egg Production & Welfare](#)
- [Disease](#)
- [Slaughter](#)



Laying hens are reared for egg production. There are approximately 29 million laying hens in the UK (1) and 388 million in the European Union, over 75% of these hens live in battery cages (2). From 2012 the 1999 Laying Hens Directive will prohibit the use of conventional battery cages but will permit the use of 'enriched' cages along with non-cage systems. In 2007 (UK), 62% of eggs came from caged hens, 4% from hens kept in barns and 34% from free-range hens, of which 6% were organic (1).

### Egg Production & Welfare

Hens are descended from the red jungle fowl of Southern Asia (2). They are taken from breeding farms when they are 18 to 20 weeks old. The vast majority of these are put into cages, usually alongside 4 other birds (3), with a single cage housing the 5 birds averaging only 40 x 55 cm in size. Each hen can produce 300 eggs per year. On average a caged hen lays only 15 more eggs a year than a hen that has been kept in a barn or free-range conditions (4). This compares with only 12-20 eggs produced each year by their wild ancestors. After 12 months the hen's egg-laying ability starts to decline, they are then considered 'spent' and slaughtered.

All egg production systems involve the disposal of unwanted male chicks as they are of no use to the industry. Male chicks from selectively bred egg-laying strains are not suitable for meat production and so are killed at 1-3 days old. There is a 50/50 chance of a male chick being born and it is estimated that around 30 million are destroyed annually by a number of permitted methods. These include the use of mechanical apparatus producing immediate death, (such as a homogeniser which minces up chicks alive), exposure to gas mixtures or dislocation of the neck (1). Other methods include decapitation, neck-breaking or suffocation. A limited number of the dead chicks are used as low-priced animal feed-stuff (at zoos and wildlife parks) with the remainder usually going into landfill.

#### Conventional 'unenriched' cages

**(Requirements as from 1<sup>st</sup> January 2003, these cages will be banned from 1<sup>st</sup> January 2012)**

Each hen is given 550cm<sup>2</sup> of cage area, (less than an A4 piece of paper), in which to move around. Until the 31<sup>st</sup> December 2011, whereby new regulations come into force, a stocking density of 12 hens per square meter is allowed (1). This ultimately leaves the hens with no room to flap and stretch, no means to bathe in dust, no perch and no nest to lay an egg in. (4). Therefore hens kept in conventional cages are unable to fulfil their basic behavioural needs such as wing-flapping, dust-bathing, scratching, pecking, perching and nest-building. The resulting frustration and stress leads to aggressive behaviour such as feather-pecking and cannibalism.

Battery cages are arranged in rows of 3-6 tiers inside huge, windowless sheds. These can contain up to 30,000 birds. Heating, ventilation and lighting are all automatically controlled. Egg-laying is promoted by light and so artificial lighting is kept on for around 17 hours/day to help increase production. Feeding and watering is also automated.

Feather pecking can be a major welfare problem in laying hens in both the caged and non-caged environments. In caged systems, as hens are unable to peck at the ground for food, they tend to turn on each other and peck out at one another's feathers. Severe bouts of this can cause cannibalism and in order to keep this under control hens often have their beaks trimmed or are de-beaked when young chicks. This procedure involves cutting off the front one-third of the bill using a hot metal



guillotine (without anaesthetic) (3). This is obviously very painful for the birds as the tip of the beak is well supplied with blood vessels and nerve endings. Studies have shown that this causes both immediate and enduring pain (5). Birds may not resume normal pecking or preening for as long as six weeks after de-beaking, and in some cases profuse bleeding and death from shock occurs. When not carried out by a veterinary surgeon then the person undertaking the procedure must be over 18 years of age and operators should be trained and continually evaluated. Beak trimming should, whenever possible, be restricted to beak tipping (the blunting of the beak to remove the sharp point). Research indicates that the availability of good quality litter (such as shavings) encourages foraging and dust-bathing and therefore reduces the feather-pecking tendency (1).

Overcrowding means hens are unable to exercise, combined with the constant demand for calcium required to produce eggs, results in weak, brittle bones which are prone to fracture. A study showed that approximately 35% of all mortalities among caged hens were attributable to bone fragility, known as cage layer osteoporosis (6). This high incidence of broken bones is a severe welfare problem causing considerable pain and distress to birds. Painful bone fractures also occur when the hens are removed from cages or caught in barns and transported for slaughter as they are easily startled becoming frantic and trying to flap their wings.

#### **Proposed 'Enriched' cages**

**(All newly built cage systems must be of an enriched type. These are the only cage systems allowed after 1<sup>st</sup> January 2012)**

Each hen must have at least 750cm<sup>2</sup> of cage area, (600cm<sup>2</sup> of this must be useable) the minimum cage height at the lowest point in the usable area is 45cm and no cage shall have a total area that is less than 2000cm<sup>2</sup>. Cages must have a nest, litter, perches, feed trough and drinking systems. These measurements however still fail to allow adequate space for the hens to perform many important natural behaviours (2).

#### **Barn eggs / Percheries**

Hens are kept in large windowless sheds with several rows of perches at different heights. The floor is likely to be at least partly covered with litter (wood shavings or straw) and nest boxes are provided. Percheries are often old battery sheds that have been converted. All newly built/rebuilt production units from 1<sup>st</sup> January 2007 must comply with the following stocking densities;

- sites stocked prior to 3<sup>rd</sup> August 1999 until 31<sup>st</sup> December 2011, 12 hens per square meter.
- sites stocked between 3<sup>rd</sup> August 1990 until 1<sup>st</sup> January 2002, 12 hens per square meter until 1<sup>st</sup> January 2007.
- new sites, no more than 9 hens per square meter usable area.

Many birds are unable to lay eggs in nest boxes and so lay them on the floor where they may be eaten by other birds or become contaminated due to contact with the bird's faeces.

#### **Free-range**

Eggs produced in these systems must come from establishments which satisfy the following conditions; hens have continuous access to open-air runs which are covered in vegetation and there must not be more than 2,500 hens per hectare of ground or one hen per 4m<sup>2</sup> at all times. The birds must have continuous access to open-air runs which means the sheds buildings have a number of exits from the hen house (pop-holes). However, inadequate numbers of pop-holes in large sheds may mean that many birds never leave the sheds. Pop-holes may also be protected by more aggressive birds discouraging other hens from using them freely. Overcrowding inside the sheds can lead to similar welfare problems as percheries with aggression, feather-pecking and cannibalism all occurring.

#### **Disease**

The intensive overcrowding and barren environment faced by the majority of hens means they are prone to a wide range of disease problems. Damage to their feet and claws can also occur causing foot infections. This results from the hens having to continually stand or crouch on thin wire floors, especially as these are generally sloped. Steep sloping floors lead to high levels of foot deformities as birds are more likely to slip. Infectious bronchitis, cage layer fatigue, leukosis and egg peritonitis are other problems encountered by laying hens.

#### **Avian Coccidiosis**

This is a parasite that affects chickens, coccidiosis is the name given to a group of closely related diseases. The parasite develops inside cells lining the intestine and as they reproduce they cause bleeding and massive swelling of the gut. This leads to the bird being unable to absorb the nutrients



from its food, many birds die as a consequence.

### **Bacterial infections**

Many hens are infected with salmonella and campylobacter though they may not show any symptoms. Salmonella for example causes infection in both animals and humans. It lives in the digestive tract of a wide range of mammals. Eggs from infected hens may contain Salmonella. This can cause severe food poisoning in humans following consumption of contaminated eggs. The infection in humans is usually short-lived causing high temperature, diarrhoea and blood poisoning.

### **Slaughter**

Over 28 million hens (28.78 million spent layers) were killed in 2008 (England and Wales) at around the age of 1 year old (27.42 million in 2007). As the hens are at the end of their productive lives they are of little economic value to the farmer and seen as a by-product of the egg industry which require disposal. As few slaughterhouses accept laying hens they are frequently transported by road on long journeys. Feed, but not water, may be withheld for up to 12 hours prior to slaughter (1).

The Welfare of Animals (Slaughter or killing) (Amendment into the 1995 Regulations) (England) Regulations 2007 now permits the killing of 'end of lay hens' and end of life breeder hens by exposure to gas on the premises where they have been housed. It also allows the Secretary of State to authorise the killing of birds by exposure to gas elsewhere than in a slaughterhouse. The culling of 'end of lay hens' on the home farm could dramatically reduce the incidence of welfare insults they experience because of catching and transport (1).

Those reaching the slaughterhouse are removed from their crates and hung upside down shackled by their feet to a moving line whilst still fully conscious. Their heads and neck are dragged through an electrically charged water bath designed to stun the birds, rendering them unconscious. The moving line then takes the birds to an automatic neck cutter. Birds are then bled before entering a scalding tank to make the plucking easier. Birds often experience pain and struggle while hung in shackles, and they may suffer during the slaughter process. It is essential that a sufficient stunning current is used and that both carotid arteries (the major blood supplies to the brain) are cut to reduce the risk of birds regaining consciousness during bleed-out and subsequently entering the scalding tank whilst still alive.

### **References & Useful Links**

1. Department for Environment Food and Rural Affairs [www.defra.gov.uk/](http://www.defra.gov.uk/)
2. Compassion in World Farming.
3. D'Silva. J. 2006. Adverse impact of industrial animal agriculture on the health and welfare of farmed animals. *Integrative Zoology*. 1:53-58.
4. The Battery Hen Welfare Trust. 2007. <http://www.thehenshouse.co.uk/factsandfigures.html>
5. Duncan. I.J.H., Slee. G.S., Seawright. E., and Breward. J. 1989. Behavioural consequences of partial beak amputation (beak trimming) in poultry. *British Poultry Science*. 30: 479-88.
6. McCoy. M.A., Reilly, G.A.C., and Kilpatrick. D.J. 1996. Density and breaking strength of bones of mortalities among caged layers. *Research in Veterinary Science*. 60: 185-6.

**Further Information** - Any questions regarding this information sheet please contact Gilly Prime - Information and Research Officer [gilly@vegsoc.org](mailto:gilly@vegsoc.org)