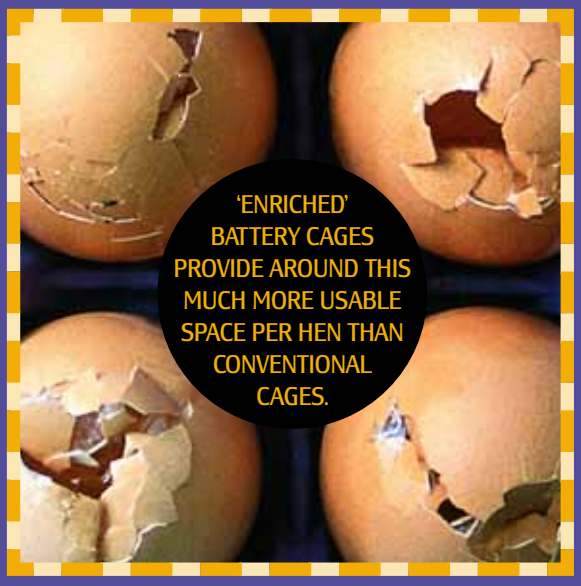
The case against cages

Evidence in favour of alternative systems for laying hens



The case against cages

In the wake of scientific evidence[1] showing that conventional battery cages are inherently damaging to laying hens, these cruel cages are to be banned in the European Union (EU), but not until 2012. Even then the hens' suffering will not end, as so-called 'enriched', or furnished battery cages will still be allowed.

Enriched battery cages are intended to improve the welfare of hens, as they are required to provide the birds with a nest box, litter material and perches. The RSPCA believes that these cages offer few benefits for laying hens over conventional battery cages because they:

- provide only a little more room – giving each hen additional usable space equivalent to less than the size of a beer mat
- severely restrict movement and fail to give hens enough space to stretch and flap their wings properly
- make it difficult for hens to use the facilities in the cages and carry out their natural behaviours.

Contrary to claims that there are good economic arguments for keeping hens in cages, new independent research commissioned by the RSPCA[2] shows that for some alternative systems, that provide significant benefits in terms of bird welfare, the costs are comparable to those of enriched cages.

With more and more consumers choosing to buy eggs from barn or free-range systems, and some retailers now only selling eggs from alternative systems, it is evident that there is an increasing demand for eggs produced in these higher welfare systems.

The RSPCA is calling for all cage systems to be banned by 2012 and for laying hens to be kept in well-managed alternative systems such as barn or free-range.

'ENRICHED' BATTERY CAGES PROVIDE AROUND THIS MUCH MORE USABLE SPACE – 50cm² – PER HEN THAN CONVENTIONAL CAGES.

Introduction

Egg laying hens kept in cages are the only major species of farm livestock in the UK that remain in caged close-confinement systems for all of their productive lives. To date, the UK government has banned the use of veal crates and sow stalls because of the behavioural restrictions and serious welfare problems they create. Yet the plight of the battery hen remains uncertain, as the final decision to ban all cages has yet to be made in the UK.

Council Directive 1999/74/EC[3] requires all EU member states to phase out conventional battery cages by 2012. The Directive responds to concerns raised in the 1996 EU Scientific Veterinary Committee report,[1] which highlighted the "severe, inherent disadvantages for the welfare of the laying hen" in small, barren battery cages.

However, the Directive will still allow the use of enriched cages after 2012. Although these cages include limited access to perches and litter, and contain a nest area, hens are still severely restricted with little room to move around. Preventing or severely restricting laying hens from performing certain important behaviours – such as wing-flapping, dustbathing or gaining access to a nest box prior to egg laying – can lead to frustration and suffering, resulting in poor welfare.[4]

The EU Directive also provides details for keeping birds in alternative systems, namely barn and free-range, which the RSPCA considers to be more appropriate for birds, allowing them to perform their normal behavioural patterns.

Some countries are taking a more positive approach. Austria will ban conventional cages in 2009 followed by a phasing out of enriched cages, Luxembourg will apply a full cage ban in 2007 and Germany is also considering a ban of all cage systems by 2012.

The main argument put forward for keeping hens in cages is that it would cost more to keep birds in alternative systems. Yet, until now, there has never been a truly independent comparison of the costs of converting an existing conventional battery cage system to either an enriched battery cage system or to an alternative system. The research[2] commissioned by the RSPCA shows that the costs for some alternative systems are comparable to those of enriched cages.

In light of this research and with the impending review of the EU Directive, the RSPCA is urging the UK government to ban all cage systems by 2012.

A hen in a conventional battery cage.

TOM CLAXTON/RSPCA PHOTOLIBRARY

Welfare concerns

The RSPCA believes that both conventional and enriched battery cages are unacceptable for laying hens on welfare grounds, as they do not adequately satisfy the hens' behavioural and physical needs.

The term 'battery cage' describes the arrangement of cages, which are stacked on top of each other in rows.[5] Each cage houses several hens and each row may contain hundreds of cages stacked at different levels. Battery cages are bare wire enclosures and each hen within the cage has the equivalent living space of 550cm^2, which is less than the size of this A4 page at 623cm^2.

Attempts to modify battery cages date back to the 1970s, with the aim to improve the conditions of the small, barren conventional cage and to enable hens to express a greater range of their normal behaviours.[6] To date, various alterations have been tried and tested, but there has been very little success in terms of making sufficient welfare improvements due to the overall inappropriate design and lack of space.

Enriched cages are similar to conventional battery cages, stacked on top of one another in row upon row, but they also provide limited facilities for nesting, perching and scratching. There are various designs of enriched cages, including colony cages that can house up to 60 or more hens. Even in enriched cages, which offer little more usable area compared to conventional cages (50cm^2 – less than the size of one beer mat per hen), hens will still spend a significant proportion of their time standing on wire mesh floors with little room to move around.

In barn systems, hens are housed in either a single or multi-tier building. The hens have room to move around, litter to scratch and dustbathe in, perches to roost on and nest boxes in which they can perform their nesting behaviour and lay their eggs.

Most free-range hens live in buildings similar to the barn system, allowing them to perform natural behaviours and move freely around the unit. In addition, the hens have access to an outside range area.

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A so-called 'enriched' cage for laying hens.

The RSPCA wants to see all battery cages replaced with well-managed alternative systems, namely barn and free-range, which offer higher welfare standards for the birds.

How caged birds suffer

Dustbathing

Dustbathing is an important ethological requirement for laying hens and contributes to both the physical and behavioural needs of the birds. Although enriched cages are required to provide litter which is meant to satisfy the hens' ethological needs, the RSPCA believes these cages cannot provide the appropriate space or substrate for adequate dustbathing.

The sequence of dustbathing has been described as occurring in three distinct stages: tossing, rubbing and shaking.[7] Initially the feathers are fluffed up, litter is investigated and manipulated by the hen with its beak, each wing is raised vertically in turn and then litter is tossed over the body and wings by the hen scratching with its feet. The hen then rubs the litter material into the feathers allowing it to penetrate through to the skin and finally shakes off the loose litter.

Dustbathing's main physical purpose is to enable hens to preen themselves and recondition their feathers, removing the build-up of stale lipids (oils produced by hens and secreted onto their feathers) and parasites.[8,9] It also helps them to maintain a comfortable body temperature. Therefore the inability of birds to dustbathe properly can have a considerable impact on their well-being.

Studies have shown that hens will spend a considerable amount of time dustbathing each day[9] and the motivation to dustbathe increases over time if the hen is deprived of litter.[10] The purpose of dustbathing behaviour is more than simply to fulfil the hens' physical needs, as research has shown that even featherless birds are motivated to dustbathe.[11] Hens that have been denied access to dustbathing material and thus are unable to dustbathe will spend much more time dustbathing when litter is provided,[12,13] indicating the long-term effects of being denied the opportunity to express this important natural behaviour.

Abnormal behaviours seen in hens deprived of important resources are described as 'vacuum' or 'sham'. For example, in the case of sham dustbathing – which can often be seen in hens kept in battery cages[14] – these hens may begin to display dustbathing behaviour on the wire floor and may even attempt to go through the motions but without gaining the physical reward for which this behaviour was intended. Indeed, in the absence of the appropriate dustbathing material the hen will usually abort the process, only to display similar behaviours at a later point. In these cases, hens may be observed to begin numerous bouts of sham dustbathing throughout the day, but never complete the sequence of events.

The EU Directive defines litter as any friable material enabling the hens to "satisfy their ethological needs", but fails to specifically state that one ethological need is dustbathing, or to specify a minimum area of litter in cages. However, the Directive does clearly specify this for hens housed in alternative systems.

The RSPCA believes it is not possible to provide litter in enriched cages in a way that meets the needs of hens, for the following reasons.

- In order to dustbathe effectively, hens need sufficient quantity and depth of litter material to cover and penetrate the feathers – due to the size of the cages, it is almost impossible to provide sufficient litter in cages that will meet the daily requirements of each hen.[15]
- Dustbathing is a natural social behaviour and hens are highly motivated to dustbathe at the same time as each other[16]. The space and layout of enriched cages would allow few hens to dustbathe at any one time regardless of how many birds are caged together. Therefore, those birds lower down in the hierarchy will rarely have the opportunity to use the dustbath, due to competition with more dominant birds.[17,18,19]
- The use of dustbaths in enriched cages for hens' dustbathing purposes has been reported to be low. This may be explained by the position of dustbaths in enriched cages, which may make it difficult for hens to gain easy access or they may not perceive the area as suitable for dustbathing.[20]
- Some birds tend to lay their eggs in the dustbathing substrate rather than the nest area[21] – making dustbathing impossible. This may be due to the restricted nesting facilities, or preference of dustbathing material for egg laying purposes.

In addition, practical problems have been encountered with finding a suitable dustbathing material, which can be delivered without causing the automatic equipment to jam. It has also been found to lead to a high level of dust in the environment, due to the layout of the cages, which are stacked on top of each other.[14]

In well-managed alternative systems, hens are provided with enough space and access to litter to be able to dustbathe where and when they choose.

Egg laying

Hens are extremely motivated to gain access to a suitable nest site in which to lay their eggs[22] and will perform complex pre-laying behaviour.[23] Provision of a nest area has been identified as a very important welfare need.[24,25]

Currently, most enriched cages provide only one small nest space in each cage and birds will be forced to compete for this site each day if they want to lay their eggs in the nest. Consequently the following may occur.

- As hens tend to lay their eggs at around the same time as each other during the day,[26] there is likely to be considerable competition for the limited nest area. Where two or more birds are seeking a laying site at the same time, some hens may be forced to lay their eggs on the wire floor.
- Hens may choose to remain in the nest area even when they are not laying eggs, preventing other birds from gaining access. This may be due to a number of factors such as social dominance or even an attempt to remove themselves away from other hens in the confined space of the cage.[21]
- In some cases, a high number of cracked eggs have been retrieved because hens lay their eggs from the perch.[27]

When hens are denied access to a particular resource, such as a nest site or appropriate dustbathing material, there may be an increase in vocalisations, and an increase in occurrence of a specific vocalisation, known as the 'gakel-call'.[4] This has been recognised as a useful measure of frustration experienced by laying hens, including frustration caused by deprivation of nestboxes and dustbathing material, as well as food and water.[28]

There is a substantial amount of evidence to show that behavioural changes result from frustration. It has been shown that hens denied access to important resources display heightened activity, with increased pacing backwards and forwards in an abnormal and stereotyped manner.[29,30,31] This can be observed particularly prior to a caged hen laying an egg, when she may spend a greater amount of time than normal in the pre-egg laying stage. This may indicate that the hen is trying to delay the onset of laying the egg for as long as possible until she can gain access to a suitable nest site.[32]

In alternative barn and free-range systems, there is considerably more nest area available to hens for egg laying purposes, giving the hens plenty of opportunity to gain access to the nest site of their choice.

Perching

Under natural conditions, perching at night in the company of flockmates is a behaviour that reduces the risk of predation and helps hens conserve heat.[33]

Modern breeds of hen have retained the strong instinct to roost, and when birds are prevented from gaining access to a perch at night they may show signs of unrest.[33] One study has shown that individual birds would be willing to push open a door weighing up to 75 per cent of their own bodyweight [33] in order to gain access to a perch, indicating a high motivation to use this facility.

Providing perches in battery cages poses practical problems because of the following.

- Depending on the positioning of the perches,[34] it may be difficult for birds to move around the cage and some areas within the cage may not be easily accessible – this can reduce the total area actually available to the birds.
- Some hens lay their eggs from the perch and as a result some eggs are cracked.[35]
- There may be health problems associated with a build-up of faeces under and around the perches.[24,36]
- Health problems, such as deformed keel bones, have been identified in hens in enriched cages. This could be due to the inappropriate shape or position of perches in cages[37,38] or perhaps due to the hens perching for prolonged periods of time because there is inadequate room available for them to move around easily or to perform other activities.

In well-managed barn or free-range systems, hens are able to freely use perches that do not detract from the overall floor area.

Space allowance

Hens naturally carry out numerous basic comfort behaviours, such as feather ruffling, head scratching, body shaking, wing stretching and flapping – all of which need more space than the minimum permitted in both conventional and enriched battery cages.

The space required by hens to perform different activities has been investigated by a number of studies. For example, to turn around it is reported that hens will occupy between 978cm^2 and 1,626cm^2 and to preen their feathers between 800cm^2 and 1,977cm^2.[39] One study also found that: "Hens have a perception of the space required to wing flap that is larger than the length of the outstretched wings",[40] a behaviour which can utilise between 1,085cm^2 and 2,606cm^2.[39]

It is evident from the findings of this work that the current minimum legal space requirement for hens in enriched battery cages, at 750cm^2 per hen – of which only 600cm^2 has to be usable – is much too low. It is difficult for the hens to even walk a few paces without obstruction by other hens or the facilities, which are arranged in close proximity to each other. The behavioural restrictions imposed on hens in cages and the consequent welfare concerns are clear.

A scientific study has shown that when hens have been denied the ability to flap their wings, over a period of one or two months, their motivation to perform this behaviour increased accordingly.[41] Also, hens kept in small cages for three months usually avoid such confined conditions more strongly than hens that have had no prior experience of such conditions.[42] This suggests that the hens found the cramped conditions increasingly inadequate and aversive.

These behavioural reactions seem to indicate that there is a build-up of motivation following severe behavioural restriction, and rather than the hen adapting to the sub-optimal conditions, there may be a detrimental effect on welfare which can result in welfare becoming poorer over time.

In a communication from the EU Commission on the protection of laying hens kept in various systems of rearing,[43] the problem with inadequate space for hens was highlighted as follows: "...even when [hens] can share their space, when 800cm^2 per bird is provided in a group of five birds, not all kinds of behaviour patterns can be performed, such as head scratching, body shaking and feather raising".

Another serious problem associated with inadequate space for laying hens is the inability of birds subjected to bullying and injurious feather pecking to move away from the dominant hen or hens,[26] which often results in considerable distress and suffering for the birds being bullied.

Feather pecking is recognised as being a potential major problem in all systems of egg production and the causes are thought to be multi-factorial.[44] Where birds have been deprived of litter material for ground pecking activities, feather pecking can be more likely to occur.[45] The more enriched environment together with reduced stocking density may help to reduce the incidence of feather pecking in some alternative systems,[46,47,48] where hens may spend up to almost 50 per cent of the daylight hours pecking and scratching at the ground.[49]

Currently, the vast majority of hens kept in the UK have their beaks trimmed as a means of trying to control the injuries associated with injurious feather pecking. The Directive allows beak trimming to be carried out by qualified staff on hens less than 10 days old. The UK implementation regulations further specify that 31 December 2010 will mark a complete ban on beak trimming. If enriched cages fail to provide adequate behavioural enrichment for the hens, this may perpetuate outbreaks of injurious pecking in these systems.

The inability of hens to move around, exercise and perform normal wing stretching and flapping movements due to a low space allowance also has a serious impact on the strength of the birds' bones.[50,51] Research has shown that many caged hens have broken, fractured and deformed bones, which occur while they are still in the cage.[52] In addition, hens are subsequently more vulnerable to bone breakages during handling when they are caught and removed from the cage.[53]

In barn and free-range systems, where hens have more room to move around, bone strength has been found to be 40 per cent stronger when compared with those of hens kept in battery cages.[54] This increased opportunity for exercise can markedly decrease the severity of osteoporosis, a condition that leads to increasingly fragile bones. Even with stronger bones, fractures do occur in these systems due to hens misjudging landings on perches and other aspects of their environment.[55] In order to minimise the risk of this happening, it is therefore imperative that there are no sharp protrusions inside the house and that perches and levels at different heights are placed such that they facilitate the movement of the hens with ease. With enriched cage systems there is no opportunity to make spatial changes to the fixtures and fittings to try and improve the welfare of the hens.

The RSPCA also believes that the height of both conventional and enriched battery cages, as specified in the EU Directive is too low, at 38cm and 45cm respectively.

Research has demonstrated that bone strength is only improved where the cage height is at least 60cm.[56] This may be explained in part by the greater opportunity to perform wing stretching and wing flapping behaviours, which cannot be performed easily in cages with less head room[57] and is particularly difficult when perching, further decreasing the vertical space available.

Other physical signs of the inadequacy of the cage environment for laying hens are highlighted by the fact that legislation requires that all cage systems provide claw-shortening devices. The claws will often grow too long because they are not worn down naturally, resulting in the claws becoming trapped, or leading to scratching and injury of other birds. However, EU legislation only addresses the problems associated with overgrown claws and fails to address the behavioural needs of the hens. Under more natural conditions, hens will spend a considerable amount of time exploring their environment, scratching the floor material with their feet to seek food and to explore other items of interest. This activity facilitates natural wear of the claws.

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Barn hens.

In alternative systems, hens have free movement over a large area and can space themselves in such a way as to allow individual hens to move away from others. This enables the hens to find sufficient room to exercise, stretch and flap their wings, increase bone strength and gain access to all the different facilities without difficulty.

ANDREW FORSYTH/RSPCA PHOTOLIBRARY

Free-range hens.

Welfare conclusions

The many negative welfare issues associated with the keeping of laying hens in enriched and conventional battery cages underpin the reasons why the RSPCA is opposed to the use of these systems.

The RSPCA has viewed enriched colony cage systems housing 60 hens in each cage and the Society has concluded that cage systems do not provide the conditions that will allow optimal levels of hen welfare due to their inability to satisfy basic behavioural needs, such as dustbathing. This will mean that millions of hens will continue to be deprived of this important aspect of their daily lives if enriched cages are allowed.

The RSPCA is urging the UK government to maintain the EU Directive as written, ban all cages and support higher welfare alternatives such as barn or free-range systems.

Advantages of well-managed alternative systems.

- Freedom of movement.
- Space and substrate to dustbathe whenever required.
- Adequate nesting area and space to carry out pre-laying behaviours.
- Space to carry out other natural behaviours such as stretching, wing flapping and foraging.

The UK egg industry

The main UK egg industry body, the British Egg Industry Council (BEIC), represents the vast majority of egg producers that keep birds in all types of systems including cages, barn and free-range. The BEIC was responsible for the launch of the Lion Quality code farm assurance scheme in 1993, which was set up specifically to address food safety concerns following salmonella scares, and other potential human health implications of egg production.

The RSPCA is concerned that despite the fact that scientific evidence has demonstrated that cage systems are unacceptable on welfare grounds. The British Egg Information Service (BEIS) claims that the Lion Quality mark on egg boxes and egg shells symbolises that the eggs have been produced to higher standards of hygiene and animal welfare than required by EU or UK law.[58] This is despite the fact that it permits the use of conventional barren battery cages that only meet the bare minimum standards of the EU legislation. The RSPCA believes that by making such claims, the BEIC may be misleading the public about the welfare of caged birds reared under the Lion Quality code scheme.

In 1999, the BEIC concluded a joint agreement[59] with the RSPCA and Compassion in World Farming (CIWF) that communicated the acceptance of a phase-out of all battery cages to the then Agriculture Minister the Rt Hon Nick Brown MP and, at the time, stated that it would not be appropriate to set out standards for enriched battery cages. But following the agreement of the EU Directive, the views of the egg industry have changed considerably and since this time, the industry has been fighting to allow the continued use of cages.[60]

Government research

The RSPCA welcomes the use of research to further improve hen welfare, such as investigating the causes of feather pecking or identifying appropriate designs of alternative systems. However, the Society is concerned that the UK government has decided to commit so much time and financial resource to research looking at cage systems. Such studies may be meaningless, including those which in some cases do not even meet the minimum requirements of the Directive, and are of little value in terms of improving laying hen welfare.

One part of the Defra-funded research programme, which in some cases uses cages that are lower and smaller than the legal minimum allowed for enriched cages prescribed within the EU Directive, does however support the Society's concerns, showing that: "Stretching and self-maintenance behaviour occurred at a very low rate" and "Full wing flaps were not performed".[61]

It is also worrying that some information which is publicly available, seems to dismiss the importance of some hen behaviours. For example, literature produced[62] by the Agricultural Development Advisory Service (ADAS) suggests that as the EU Directive does not include the word 'dustbathing', this behaviour does not need to be satisfied.

The failure to provide suitable dustbathing material for laying hens is, in the RSPCA's view, contrary to the intention behind the EU Directive, which is to address the key welfare issues. The EU Commission's response[63] to the opinion of the EU Scientific Veterinary Committee (SVC) Report,[1] stated that: "A housing system for laying hens should provide enough space to be able to perform a number of basic behaviours...The environment should be such that the bird is able to perch, to lay eggs in a nest, to peck, to scratch and to dustbathe". It continues that: "...litter should be of a suitable type, maintained in a usable condition and must be suitable for perching, scratching and for dustbathing."

Farm Animal Welfare Council

The Farm Animal Welfare Council (FAWC) is an independent advisory body to the UK government, established in 1979 to review the welfare of farm animals and advise on legislative changes.

FAWC outlined detailed concerns about the welfare of laying hens in a report in 1997.[64] Points raised include the following.

- Behavioural activities, which are most important, are nesting, perching and using litter for scratching, pecking and dustbathing.
- Where a friable litter substrate is provided, it is intensively used by hens for scratching, dustbathing and pecking.
- There is experimental evidence to show that hens, when given the choice, strongly prefer litter to a wire mesh floor.
- Hens that are deprived of litter may have a greater tendency towards injurious pecking. Hens should have sufficient space to allow them to walk from one resource to another, investigate their surroundings, flap their wings and have safe access to perches.

In response to the government's consultation exercise on a possible ban on enriched cages (2002),[65] FAWC reiterated its views published in the 1997 report. It stated that: "The need for birds to have sufficient space to walk from one resource to another, investigate their surroundings and flap their wings", needed major consideration in the design of enriched cages, and that: "From the limited experimentation that has been conducted this requirement seems scarcely satisfied in the 750cm^2 minimum specified in the Directive."

FAWC raised concerns about the suitability of enriched battery cage designs that were currently available: "...the facilities for pecking and scratching appear restricted and very rudimentary and it is not clear how adequately they fulfil minimum behavioural needs. Dustbathing...is not an unimportant behaviour and should be provided for."

Although FAWC did not dismiss the possibility of accepting enriched cages for use in the future, it identified areas of serious concern and reservations similar to those raised by the RSPCA, about the research projects funded by the UK government (which have since been completed). "Some research...is being conducted at ADAS Gleadthorpe...and is rather restricted in scope and is being conducted within the context of current cage designs. Other research, while demonstrating some welfare advantages of enrichment, does not yield an integrated picture of the overall welfare outcomes – especially in comparison with other commercial egg production systems. In these circumstances it is impossible to come to any research-based conclusions on egg production in enriched [battery] cages." FAWC further commented: "It cannot be presumed that simply augmenting, or developing modified versions of existing cages would be sufficient...Based on the trials [FAWC] has seen, the research on enrichment that has been conducted over past years has not led to any designs of cage that are fully convincing, or that relieve [FAWC's] concerns over welfare impacts of restricting the hens' natural behaviour patterns."

Conventional battery cages – enriched cages offer little more space and limited facilities.

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What other countries are doing

EU Council Directive 1999/74/EC requires battery cages to be phased out by 2012, however some countries will apply the ban earlier.

- **Austria** – no new cages are to be built after 1 January 2005 and no conventional battery cages can be in use by 2009. Enriched cages that were in production prior to 2005 can continue to operate for 15 years from the date they were built.

- **Luxembourg** – both conventional battery and enriched cages will be banned from January 2007.

- **Germany** – considering a ban on conventional cages by 2007 and no cage systems can be utilised from 2012.

- **Switzerland** – conventional battery cages were in effect banned in Switzerland in 1992. Swiss Animal Protection Regulations stipulate that conditions within cages do not satisfy the welfare needs of hens.

  In 1981, Switzerland introduced an animal welfare-related pre-testing procedure for large-scale laying hen housing systems and equipment[66] Article 1 of the Swiss Animal Protection Regulations state that: "Feeding, care and housing shall be deemed suitable where, according to existing experience and the state of knowledge concerning physiology, animal behaviour and hygiene, they comply with the animals' requirements."[67]

  The Regulations require housing systems for laying hens to provide protected, darkened, soft-floored or litter-lined nest boxes, as well as suitable perches or a slatted floor. As conventional battery cages do not fulfil these requirements they had to be replaced by alternative housing systems within a transitional period of 10 years, ending in 1991. The Regulations precluded the use of conventional battery cages rather than an explicit ban being imposed.

  After 1991, modified cages of varying sizes were developed and tested. Detailed observations were made on resting, aggressive behaviour, feather pecking and cannibalism. The behavioural observations revealed a number of welfare problems.[68]

  - Hens appeared to be unable to differentiate between resting and activity areas.
  - Hens frequently paced along the boundaries of the cages prior to the laying of eggs, suggesting a problem with selecting a suitable nest site.
  - Hens could not perform any dustbathing behaviour because there was no litter in the cage. Replacement behaviours such as vacuum dustbathing on the floor and beak raking in the food were regularly observed.
  - Normal foraging behaviour was impaired due to the lack of litter.
  - There were major problems with injurious feather pecking.
  - Mortality rates were very high with more than 30 per cent of the hens having died by the end of the laying period. The main cause of mortality was cannibalism, even though the light intensity was reduced to just five lux, the minimum required by the Regulations in an attempt to minimise pecking behaviour and injury.

  Based on these results the Federal Veterinary Office refused manufacturers permission to build the new modified cages for commercial egg production because they do not meet the Swiss Animal Protection Regulations.

Defra consultation

In 2002, Defra carried out a consultation exercise[69] on a possible ban on enriched cages, to which the RSPCA responded in detail.

The consultation document included economic figures within the partial Regulatory Impact Assessment (RIA),[69] which assessed the economic impact of banning enriched cages. The RSPCA believes that Defra's conclusions were flawed because they were largely based on dated industry figures, which in the Society's view provide misleading information.

It was on this basis that the Society commissioned independent research in order to provide more objective information.

Counting the cost: Independent economic research

As a result of the RSPCA's initial concerns about figures from Defra, the Society commissioned independent research[2] to look at the comparison in the cost of converting existing conventional cages into enriched cages, barn or free-range systems.

Key research findings

From the findings of comparisons made in this study between different case studies and industry averages, the following conclusions can be drawn.

- The figures obtained for multi-tier barn systems provide evidence that the costs of keeping laying hens in alternative systems may not be as high as previously predicted by the UK egg industry.
- Depending on the scale of production, the cost implications associated with installing and operating barn multi-tier systems may be similar to enriched cage systems. For the small-scale producer, the costs associated with the barn multi-tier system are particularly comparable to the enriched cage system.
- Based on the information obtained from the case studies and the lack of publicly available comparable data from the egg industry, it is clear that both government and industry data available to date does not allow a realistic or accurate prediction to be made of the economic impact of Council Directive 1999/74/EC on the UK egg industry.

Barn hens.

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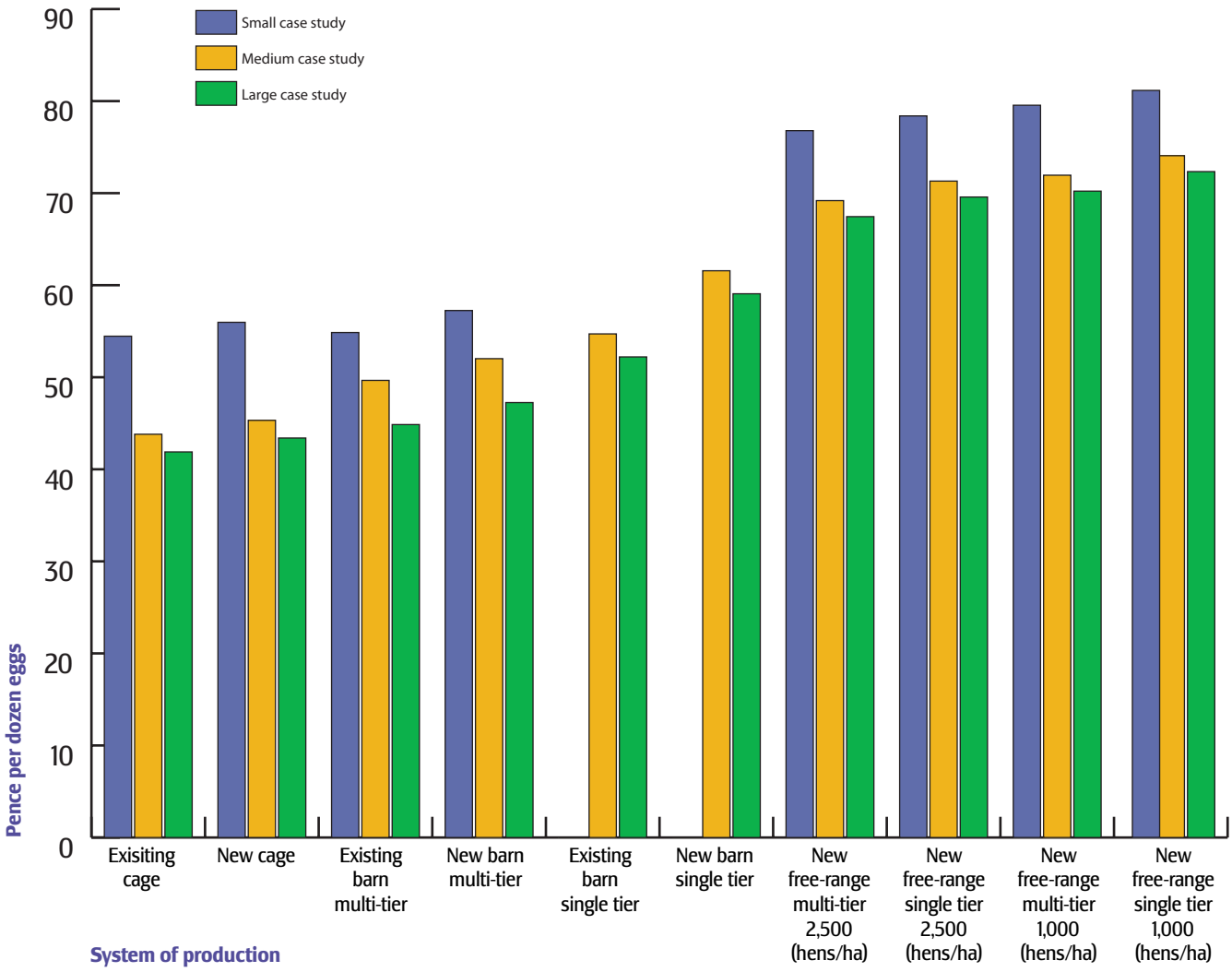
Graph showing the difference in total costs of egg production in new or existing buildings of various systems.



Total costs in pence per dozen eggs.

System of production	Small case study	Medium case study	Large case study
Exisiting cage	54.46	43.81	41.89
New cage	55.97	45.32	43.40
Existing barn multi-tier	54.86	49.66	44.86
New barn multi-tier	57.25	52.05	47.25
Existing barn single tier	–	54.71	52.21
New barn single tier	–	61.57	59.07
New free-range multi-tier 2,500 (hens/ha)	76.79	69.19	67.45
New free-range single tier 2,500 (hens/ha)	78.39	71.31	69.58
New free-range multi-tier 1,000 (hens/ha)	79.55	71.95	70.22
New free-range single tier 1,000 (hens/ha)	81.15	74.07	72.34

Methodology

In order to obtain an accurate assessment of the economic implications associated with a change in production method from the farmers' point of view, analysis was made of specific data from individual egg producers, as follows.

a) Individual egg producers were invited to take part in case studies.

The case study approach enables a robust assessment to be made of the actual financial implications, taking into account the physical and financial characteristics of the farms involved. One example was taken from each of the three categories (i.e. 'small' 12,000 birds; 'medium' 100,000 birds; and 'large' 400,000 birds) as defined by Defra when they conducted the Regulatory Impact Assessment (RIA) in 2001. The producers' own systems and financial situation then formed the basis of the calculations for converting the conventional battery cage systems into one of the other options available. The case study data was validated against industry averages.

b) A number of equipment manufacturers were consulted to obtain quotes for the different systems which could be installed to replace cage systems currently used in each of the case studies.

Quotes were obtained for enriched cages, barn and free-range systems.

c) Costs for building new units were considered, as well as for converting existing buildings.

It was assumed that new buildings would be required for free-range systems, due to potential limitations on land availability at the cage site – although this may not be the case in all instances, and the figures for conversion could be much less than those reported here. In addition, the report considered two different outdoor stocking densities for birds on the range (2,500 birds per hectare and 1,000 birds per hectare), as specified in the European Egg Marketing Regulations[70] and the RSPCA welfare standards for laying hens[71]/BEIC Lion Quality code standards[72] respectively.

Fifteen years is a typical expected lifespan of cage equipment and was the period selected in this research for depreciation, which was calculated at seven per cent over the 15 years.

For each producer, the following information was considered:

- capital costs
- running costs
- combination of the above to give the total production costs.

d) Key cost drivers were identified such as feed, labour, egg production, mortality – which may affect the total costs of production in one system more than another.

Essentially, production costs were considered in relation to the marketplace to which the production system is geared. Egg producers sell their eggs to a number of different outlets – such as retailer or large wholesalers, local outlets and markets and farm gate sales. This gives rise to a range of different prices received for egg sales.

The figures obtained from the individual case studies can be regarded as representative and have allowed for economies of scale by using small-, medium- and large-scale producers, whereas the industry data has historically been based on averages and covers the UK egg industry as a whole.

Contrary to claims that there are good economic arguments for keeping hens in cages, rather than in higher welfare alternatives such as barn or free-range systems, the independent research commissioned by the RSPCA shows that the costs for some alternative systems are comparable to those of enriched cages.

Consumers

In the UK there are about 32 million laying hens[73] housed in the following systems, with approximately:

- 66 per cent of eggs produced in cages
- seven per cent of eggs produced in barn systems
- 27 per cent of eggs produced in free-range systems.[74]

A MORI opinion poll conducted in 2005[75] found that an overwhelming 87 per cent of consumers think battery cages are cruel, and 76 per cent of those interviewed believe the UK government should make it a priority to ban cages. These figure have increased by four and five per cent respectively in three years.[76]

The UK free-range egg market continues to expand. This has been largely due to campaigns to raise awareness of the welfare problems of keeping hens in cages, and the public's increasing desire to choose eggs from higher welfare systems.

European survey: The 'Eurobarometer'

In 2005, the European Commission carried out its first survey[77] that looked at the attitudes of consumers to the welfare of farmed animals across the 25 member states. The welfare of laying hens was seen as the priority issue where standards should be improved. The survey also revealed that the majority of people questioned in the EU and the UK are prepared to pay more for eggs produced from hens kept in higher welfare production systems.

Retailers

UK retailers are beginning to respond to consumers' demands for eggs to be produced from higher welfare alternative systems such as barn or free-range.

Asda
In May 2005, Asda removed its standard caged egg range. It predicts that this will benefit half a million hens.

Co-op
Co-op aims to sell 80 per cent of its eggs from free-range systems by 2007, at which point shell eggs will shift entirely into free-range.

Marks & Spencer
Marks & Spencer was the first retailer to introduce a free-range egg policy and stop selling shell eggs from caged hens. Where eggs are used as an ingredient in their products, only free-range eggs are used.

Sainsbury's
In June 2005, Sainsbury's removed its standard caged egg range. It predicts that two million fewer eggs from caged hens will be sold per week.

Tesco
Replaced its standard caged egg range with barn eggs. Eggs from alternative systems are used as an ingredient in Tesco 'Finest' and own-brand vegetarian ranges.

Waitrose
Waitrose stopped selling shell eggs from caged systems in 2001. Free-range eggs are used as an ingredient in all own-brand foods.

The RSPCA welcomes the response from UK supermarkets and hopes they will continue to listen to their consumers and make further improvements. The RSPCA wants retailers to sell only eggs and products containing eggs that are from hens kept in barn and free-range systems.

Co-op case study[78]

In 1994, the Co-op surveyed its consumers about their concerns regarding the food industry. This consultation has since had a huge influence on a number of issues within the company's policies. In 2004 the survey was repeated. The results from consulting 30,000 members of the public, showed that consumers felt food retailers should be doing more to address public concerns and provide more information to consumers, and help them make informed choices when shopping.

Farm animal welfare was the resounding lead item where people expected action to be taken, with particular concern for specific action on caged hens and better labelling of higher welfare options.

Unlike some of its competitors, the Co-op still has a very diverse consumer base with both affluent consumers that are willing to pay a little extra for free-range eggs, alongside many customers that have less to spend.

The Co-op believes that egg packaging can confuse consumers. Designs on egg boxes showing hens happily pecking in a field can lead consumers to believe they are buying free-range eggs when they are actually buying eggs from caged hens.

The Co-op made a decision to create new labelling that clearly states from which production system eggs have originated. By doing this, the Co-op went against the prevailing industry line at the time.

In early 2004, about 45 per cent of the eggs Co-op sold were free-range. By promoting free-range, re-merchandising and re-designing packaging to make free-range eggs more attractive and more clearly marking caged eggs, Co-op succeeded in increasing that proportion to 58 per cent by October 2004, a change of about one-third in six months. In July 2005 that figure had increased to 61 per cent, with an additional five per cent of egg sales being organic.

Co-op's aim is to sell 80 per cent of its eggs from alternative systems by 2007. This will enable the shift fully into free-range sales, removing caged eggs entirely.

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Marks & Spencer case study[79]

In September 1997 Marks & Spencer was the first UK food retailer to sell only free-range eggs. This landmark initiative was a direct response to concerns from its customers about laying hen welfare and a demonstration of its business' passion and commitment to ensuring high standards of animal welfare in the production of all the livestock used for its foods.

Marks & Spencer sells more than one million shell eggs per week – whether free-range, free-range organic or free-range omega-3. For every one shell egg Marks & Spencer sells, it uses roughly five times as many as an ingredient in its prepared foods. At the time Marks & Spencer announced its 100 per cent free-range shell egg policy, it made a commitment to only use free-range eggs as an ingredient in all of its prepared foods. To ensure the availability of such a large volume of free-range eggs and guarantee that they are truly from free-range hens was no mean feat. An additional 700,000 free-range egg laying hens were introduced into Marks & Spencer's supply chain to accomplish this.

In 2002 it achieved its goal. All Marks & Spencer eggs, whether whole egg or used as an ingredient in foods, were free-range right down to the glazing used on its sausage rolls. To do this Marks & Spencer worked in close partnership with its existing egg suppliers and prepared-food manufacturers, involving hundreds of products from ready meals to ambient foods.

Free-range hens.

ANDREW FORSYTH/RSPCA PHOTOLIBRARY

WTO: The challenge of imported eggs

The RSPCA is aware that in the event of a ban on cage systems, lower production costs of imported eggs could undermine the competitiveness of the British egg industry[80] to some extent.

Under current World Trade Organisation (WTO) rules, the EU may be unable to stop cheaper caged eggs particularly in the form of liquid or dried egg from being imported, which would undercut European eggs produced in higher welfare barn or free-range systems.

European marketing regulations ensure that eggs produced in the EU are labelled with the production method used. The regulation does not extend to liquid or dried eggs, or the production method for shell eggs imported into the EU from other countries.

The RSPCA is calling for the following to be agreed and introduced under the WTO rules:

- mandatory labelling to indicate the method of production for imported shell eggs and products containing eggs, including imports
- measures put in place to prevent producers of higher welfare systems being undercut by imports from cheaper systems such as conventional battery cages, including allowing support measures for eggs produced under a country's Rural Development Programme
- ensuring that any reductions in tariffs for imported caged eggs do not undercut EU producers.

Egg prices

Due to the lack of space within existing battery cages, egg production costs are kept to a minimum.

Soon after the EU Directive was agreed, the egg industry was reported to say that: "...without cage eggs we would be guilty of depriving the poorest of the poor of a low cost nutritious protein food."[81] It is for this reason that the egg industry claims it cannot remove all hens from cages.

According to a senior economist at the University of Exeter a ban on battery cages may result in an overall increase of 28 per cent in production costs, which would result in a cost increase at consumer level of just 2.8p per person per week.[82] This is very insignificant in the majority of cases. It is also clear that egg price increases have not, to date, prevented the growth of eggs produced in alternative systems illustrated by the fact that there has been a dramatic increase in the number of hens kept in these systems to meet consumer demand. Indeed, this suggests that it is highly unlikely that, if cages were banned in the future, the estimated price increase of just 2.8p per person per week would prevent consumers from buying higher welfare eggs.

Egg labelling

Strength of public opinion in favour of a ban on battery cages together with current rising levels of sales of non-caged eggs, indicates there is an enormous consumer drive to buy eggs from hens kept in higher welfare systems. However, it is also important to ensure consumers have the necessary information through clear labelling to allow them to make an informed choice about the products they buy.

In January 2004, a new European law[70] came into effect making it obligatory to label all shell eggs and egg boxes according to the method of production. All eggs produced in the EU must be stamped with a code to show where they came from and all egg boxes/packaging must identify the method of production.

The law also revised marketing terms to ensure that where for example eggs are labelled as 'free-range', hens must have a specified amount of access to range and minimum standards in the hen house must comply with EU legislation. These requirements reflect the EU Commission's intention to help ensure greater transparency about the method of egg production so that consumers know what they are buying.

However, labelling with 'eggs from caged hens' can be hidden from immediate view, for example in small letters on the back of the box, and the bold text and images used on the front can imply hens are kept in barn or free-range conditions. A MORI poll conducted in January 2005[83] confirmed that misleading terms such as 'farm fresh are confusing consumers. Only 36 per cent of respondents correctly identified the method of production when shown three different egg boxes containing eggs from caged hens. This suggests that sales of eggs from barn and free-range could be even greater if labelling were clearer, as demonstrated by the Co-op's case study (page 17).

The RSPCA is concerned that there is no compulsory labelling on products that contain egg as an ingredient. Liquid and dried powdered eggs are added to processed foods such as quiches, cakes and other products and it is extremely difficult for consumers to know if these originate from alternative or caged systems. A survey carried out by the RSPCA[84] revealed that 81 per cent of retailers surveyed admitted that some of their vegetarian products contained battery cage eggs.

The RSPCA would like to see clearer labelling on whole eggs and the introduction of mandatory labelling on all products that contain eggs.

Legislation should be expanded so as to include mandatory labelling for all eggs (and products) that are imported into the UK and EU, to further enable consumers to make a well-informed choice about the eggs they purchase.

Conclusions

The RSPCA believes that in the light of the overwhelming scientific evidence that clearly demonstrates the many serious welfare problems associated with keeping laying hens in cages, all cage systems should be banned and replaced with suitable, alternative systems namely barn and free-range. Small (five birds) and colony size (about 60 birds) enriched cages are not an acceptable alternative to conventional battery cages, as they still fail to provide adequately for the needs of hens.

Independent research commissioned by the RSPCA shows that cost can no longer be used as an excuse for not banning all cage systems for laying hens, as there are higher welfare systems that can offer egg producers financial competitive alternatives to keeping hens in cages.

Retailers are listening to consumers and making concerted efforts to stock more eggs produced from barn or free-range systems, and in some cases sell only non-cage eggs.

The demand by consumers to buy non-caged eggs is growing – 10 years ago, less than 15 per cent of eggs came from hens housed in barn or free-range systems, by the end of 2004 this figure had risen to 34 per cent.

The majority of UK consumers believe that battery cages are cruel and think the UK government should make it a priority to ban them immediately. A European survey revealed that consumers in the EU and the UK may be prepared to spend more money on purchasing eggs from higher welfare alternative systems.

What the RSPCA wants

- **The ban on conventional battery cages in 2012 to be upheld in the review of the European Laying Hen Directive 1999/74/EC.**
- **All cage systems for laying hens to be banned by 2012.**
- **All hens to be kept in well-managed alternative production systems namely, barn and free-range.**
- **All eggs and egg products – produced within and outside the EU – to be clearly labelled according to the method of production and country of origin.**
- **Retailers to sell only eggs and products containing eggs that are from hens kept in barn and free-range systems, with imported eggs attaining the minimum production standards equivalent to those in the UK.**

Free-range hens.

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