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THE CASE FOR

CAGE-FREE LEGISLATION

Photo: Jo-Anne McArthur | We Animals

SUMMARY

This report intends to demonstrate the scientific case for legislation to ban cages for egg-laying hens as supported by animal welfare advocates and consumers around the world. With over 840 commitments to end the use of cages by big businesses across Europe (as of September 2019), it's time for legislation to catch up with the social conscience of consumers. A number of countries have already brought in legislation to prohibit the caging of egg-laying hens, and this report is intended to support legislatures in arguing for national cage-free policies for egg-laying hens in other European countries. This demand comes from millions of European citizens who want to see an end to the cruel confinement of hens in cages and who are willing to pay for cage-free production.

With over 840 commitments to end the use of cages by big businesses, it's time for legislation to catch up with the social conscience of consumers.

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WHAT YOU NEED TO KNOW

ONE

STUDIES SHOW THAT HENS HAVE A HIGH LEVEL OF INTELLIGENCE, social and verbal complexity. They have individual personalities, and they can sense objects even when they are hidden. They can also experience empathy when hearing the calls of their chicks and communicate with them while they are still inside the egg.

TWO

BIRDS REQUIRE MORE SPACE than what is available in cages to allow for the expression of species-specific behaviours such as wing flapping, stretching, body shaking, tail wagging, foraging, dust-bathing, perching and nesting. When hens are confined in cages, many of these behaviours cannot be performed or are severely restricted, leading to frustration that can be extremely detrimental to the wellbeing of the birds. Cages are not conducive to animal welfare.

THREE

WHEN GIVEN THE CHOICE, hens are very motivated for access to extra space and prefer to avoid spaces with a height of less than 46cm, which exceeds the height of many enriched cages.

FOUR

94% OF EUROPEAN CITIZENS regard the protection and welfare of farmed animals to be important. Over half believe there are not sufficient higher welfare choices on the market. Legislation should ensure better animal welfare standards.

FIVE

IT IS IMPORTANT THAT YOUNG BIRDS are reared in systems that are similar to what they will experience later in life, allowing them time to learn and adapt while they are small and agile. Recent studies have shown that pullets reared in aviaries have better working memory and are less fearful than pullets reared in cages.

TABLE 1 Egg Systems as Defined by EU Marketing Regulations

CODE	SYSTEM TYPE
0	**ORGANIC**—the highest space provision for hens out of all systems, with a maximum of 6 hens/m^2 of usable space in the barn and more space outside, requiring at least 10m^2 per hen. Birds are also provided with a secluded nesting area and perching.
1	**FREE-RANGE**—hens have the same minimum conditions in the barn as 'Barn' egg standards but with the addition of access to pasture during the daytime (minimum space allowance of 4 birds/m^2).
2	**BARN**—hens are free to move around the barn. There is a minimum space allowance of 1111cm^2 (maximum 9 hens/m^2 of usable space) and 1/3 of the floor area must be covered with litter. Single tier systems mean only one level off the ground with a secluded nest site and perches. Multi-tier or Aviary systems typically have up to 4 tiers with different provisions on each level. Both require at least 1m^2 of nest space for a maximum of 120 hens.
3	**FURNISHED/ENRICHED CAGE**—hens are caged with a minimum space of 750cm^2, 600cm^2 must be 'usable' (less than an A4 sheet of paper per hen). Birds are provided with perches and minimum 45cm of usable height. There is a secluded nest area and a small scratching mat per cage.
N/A	**BARREN CAGE**—this system was banned in the EU in 2012. Hens were given a space of around 550cm^2 with no provisions for perching or nesting.

LEGISLATION

IN 2012, THE EU BANNED THE USE OF CONVENTIONAL BARREN CAGES but allowed the use of so-called 'enriched' cages. However, some Member States quickly found them to be unacceptable from the point of view of animal welfare standards and the five freedoms (freedom from hunger and thirst; discomfort; pain, injury or disease; fear and distress, and to express normal behaviour).

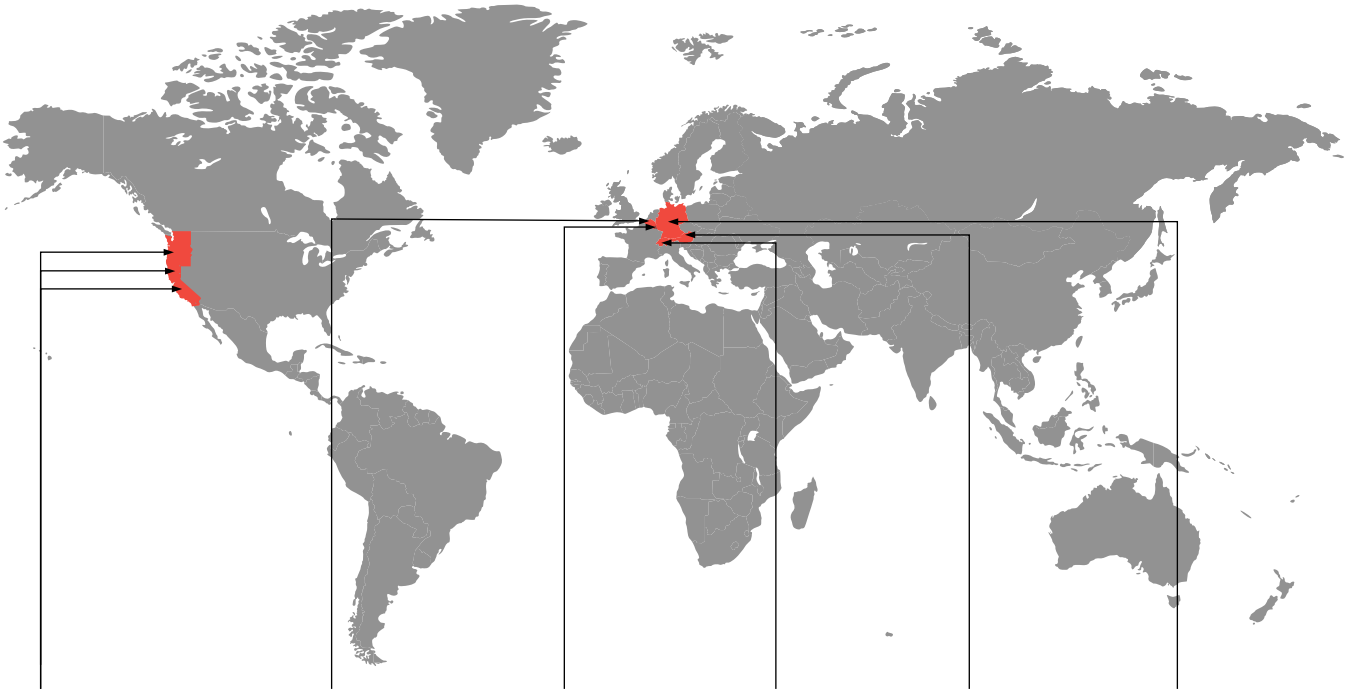
Globally, animal protection organisations encourage legislation to end cages and promote cage-free production, changing the lives of hundreds of millions of hens for the better. They argue that raising hens in cages is not compliant with the protection that the Animal Welfare Acts are supposed to offer animals.

Nevertheless, better welfare does not mean inconvenience for the industry. Industry estimates show that cage-free production promotes jobs [1]. When the animals are not kept in cages, it is possible for the employees to care better for their birds, which makes it possible to employ more people.

While half of the EU's egg-laying hens are still living in cages, the number is decreasing. Enriched cages are prohibited in Luxembourg, and in Austria they have been almost completely phased out, with a total ban coming into force from 2020. In Germany, they will be banned from 2025 (in exceptional cases from 2028), and a ban will also come into force in the Walloon region of Belgium in 2028. In Switzerland, no cage farms operate as there has been a falling demand for cage eggs and products containing cage eggs. Furthermore, Washington State, Oregon and California are all transitioning to cage-free in the United States with bans of commercial cage egg production and sales, improving the lives of tens of millions of hens every year by giving each bird more space and enrichment. Now is the time for countries to secure national legislation to phase out cages completely.

Better animal welfare does not mean inconvenience for the industry.

FIG. 1—GLOBAL CAGE-FREE LEGISLATION



Washington, Oregon, California, USA
Bans of commercial cage egg production and sales

Walloon Region, Belgium
A ban will come into force in 2028

Luxembourg
Enriched cages are prohibited

Switzerland
No cage farms operate

Austria
A total ban coming into force from 2020

Germany
Banned from 2025 (in exceptional cases from 2028)

In addition to adult hens living in cages, there are many millions of young chicks and pullets currently spending their first 17-18 weeks of life in cages. Their welfare is not even covered by specific legislation and while the number of pullets that are caged is not recorded, it is likely to be well over 100 million each year. Pullet rearing has a big impact on the welfare of birds both while they are young and as adults when they go into systems to lay eggs. Therefore, we also recommend legislation to support cage-free pullet rearing.

THE CONSUMER MARKET TODAY

IN RECENT YEARS, EUROPEAN CITIZENS have become increasingly aware and concerned about animal welfare and environmental issues. Consequently, consumers in European markets are demanding more ethical food, i.e., eggs that are produced in systems with higher animal welfare standards—some of which are addressed in this report. In a 2018 report Eurogroup for Animals and AgraCEAS[2] found that:

"94% of European citizens regard the protection and welfare of farmed animals (including laying hens) to be important (99% in Sweden, Finland and Portugal)."

The lowest average was still an overwhelming majority, with 86-88% of respondents in Hungary, Croatia, Poland, Slovakia and Bulgaria reporting animal welfare as important[2].

It is clear that over time, the importance of animal welfare for European consumers has been on the rise. When comparing the 2007 Eurobarometer with the most recent study in 2016 there was a 5% increase in respondents that believe the welfare of animals raised for food should be better protected (going from 77% to 82%)[2].

More than half believe there is not a sufficient choice of higher welfare products and the majority (59%) indicate a willingness to pay more for higher welfare products[2].

Thanks to clearer labelling for shell eggs, two recent studies found that consumers expressed a preference for higher welfare systems, being able to clearly differentiate between caged and non-cage systems[3]. Consumers' awareness of welfare standards goes further than just caged versus non-caged. Consumers clearly differentiate between barn and free-range systems with a strong preference for production with outdoor access for hens. Similarly, a survey carried out in the UK indicated that consumers think hens in free-range systems are "happier" (74.2%) and that outdoor access and fresh air are the most important factors to ensure higher animal welfare standards[4].

The importance of legislation adapting to consumers' animal welfare preferences cannot be understated. Legislation ought to ensure better animal welfare standards.

"

Nestlé is committed to improving animal welfare in our food supply chain in Europe, including transitioning to cage-free eggs by 2020 and improving conditions for broiler chickens.

However, we cannot achieve system wide change on our own. National or preferably EU legislation would create a level playing field and help speed up improvements in welfare practices for the whole sector.

Bart Vandewaetere—*Head of Corporate Communications and Government Relations, Zone Europe, Middle East & North Africa*

THE INTELLIGENCE OF HENS

AVIAN INTELLIGENCE HAS GENERALLY BEEN NEGLECTED in the study of animal cognition. Even among birds, hens have been overlooked and research has focused on crows and parrots[5]. However, a number of studies have examined the cognitive abilities of domestic hens and have reported a high level of intelligence, social and verbal complexity. According to cognitive scientist Lori Marino, the unexpected emotional complexity of domestic hens should make us reconsider how we treat them and investigate them, where scientists have mostly studied hens in their role as production animals and not in their own right.

There are many anecdotes and a number of studies indicating that hens have individual personalities[5]. Despite their relatively small brain size, hens have demonstrated that some of their abilities are on a par with that of mammals and even young children. Young hens have also shown some degree of object permanence, meaning that they can sense or are aware of objects when they have been hidden. They have the ability to count, can discriminate between different quantities, and can perform simple arithmetic operations[6] as well as make basic logical conclusions[7].

Domestic hens appear to be able to exercise 'self-control'—an ability that emerges in human children when they are about four years old—and they have been shown to be able to resist immediate gratification to obtain a greater reward at a later time[8]. Hens are social animals with complex vocalisation and visual displays and can refer to specific elements of their environment as well as use special alarm-calls for predators coming from above (e.g. birds of prey) or on the ground (e.g. racoon or fox)[9]. Socially, chickens live in large groups and hens have shown the ability to identify between different individuals[10]. Studies on the emotional lives of hens have mainly focused on negative emotions such as fear[11], but there is good reason to assume that hens experience a wide range of other emotions.[5] For instance, mother hens experience feelings interpreted as empathy upon hearing the calls of their chicks [12].

Domestic hens appear to be able to exercise 'self-control'—an ability that emerges in human children when they are about four years old.

SIX KEY FACTS ABOUT HENS

1 They have individual personalities,

2 Can sense objects even when they are hidden,

3 Discriminate between different quantities,

4 Can exercise 'self-control',

5 Can communicate with their chicks while they are still in eggs,

6 Experience empathy when hearing the calls of their chicks.

Organic and free-range systems offer the highest welfare potential for hens

SPACE AND BEHAVIOURAL NEEDS

DESPITE AN OFTEN LONG DOMESTICATION PROCESS, most animals raised for food have retained many of the original behavioural traits of their wild ancestors [13,14]. Too many of their natural behavioural patterns are impossible to perform in barren or enriched cages. Natural behaviours are considered crucial for the wellbeing of animals—the behavioural or ethological needs [14,15] and comfort behaviours, i.e. adaptive behaviours with long-term beneficial effects for health and resilience. If they are prevented, this can lead to harmful (stereotypic) behaviours. Animals should not only have their physical needs met but also be allowed to experience wellbeing and positive emotions [16].

MOVEMENT

EGG-LAYING HENS NEED SUFFICIENT THREE-DIMENSIONAL SPACE TO ACCOMMODATE THEIR SIZE and allow them to be able to perform basic body movements [17]. Space requirements need to allow for the expression of species-specific behaviours such as stretching, foraging, dust-bathing, perching and nesting [18,19]. Studies have examined the space requirements for some of the most essential and basic behaviours of different strains of hens: standing, laying, perching, wing flapping and dust-bathing. They found that it is impossible, or nearly impossible, for them to perform these in cages [20–23]. It is well-known that behavioural deprivation can cause frustration, suffering and poor welfare[24].

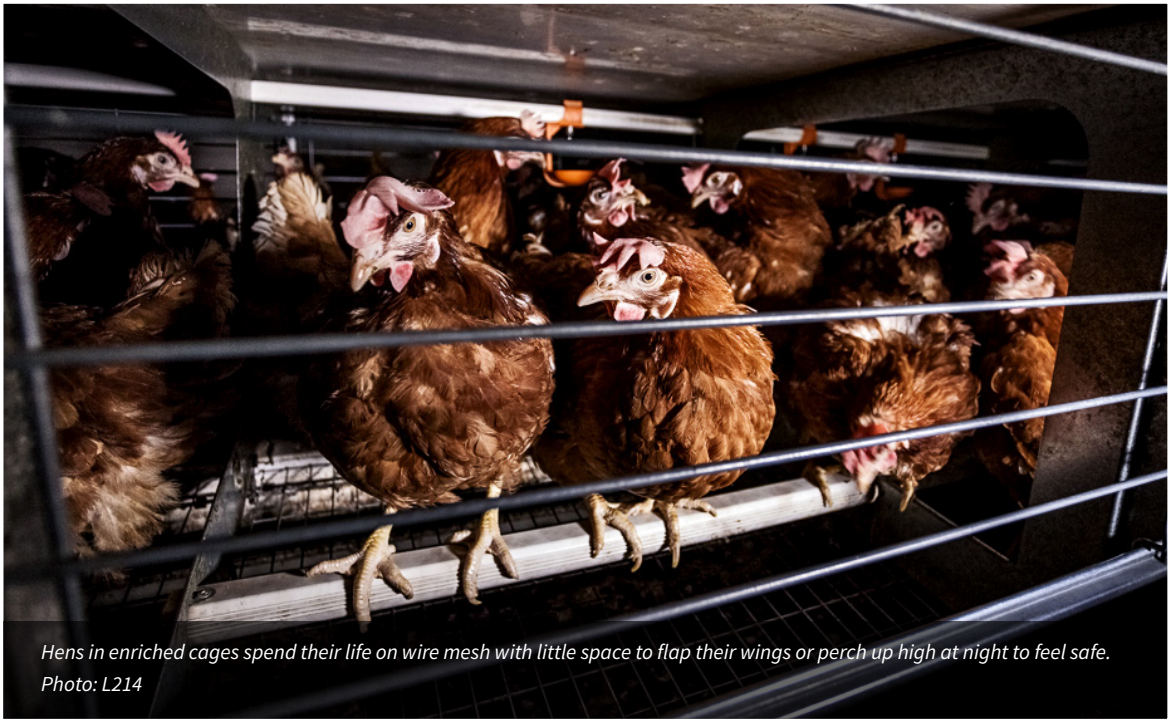
When given the choice, hens are very motivated to access extra space and prefer to avoid spaces with a height of less than 46cm, which exceeds the usable height of enriched cages.

High stocking density in cages has been shown to reduce the occurrence of comfort behaviours [18]. When given the choice, hens are very motivated to access extra space and prefer to avoid spaces with a height of less than 46cm,[25] which exceeds the usable height of enriched cages.

In addition, hens may need personal space as birds in groups position themselves at an appropriate distance from others to perform certain behaviours. The frequency with which a behaviour is performed will decrease if there is not enough space or distance from others to perform it, impacting negatively on their welfare [26]. It has also been shown that lack of space is an important factor in the development of feather-pecking [27–29].

NESTING

NESTING HAS BEEN IDENTIFIED as possibly the most important behavioural need of laying hens [30–32] and even hens that have never previously used a nestbox will seek one and value it when provided with one [33]. Laying hens are highly motivated to access a discrete enclosed nesting site and the motivational strength increases around the time of egg-laying. Hens that are prevented from accessing a suitable nest site can show signs of frustration and stress [34,35]. Although the 'enriched' cages are fitted with a small nest area, the crowded conditions can prevent lower-ranking hens from accessing it, whereas alternative systems, with large nest box areas, offer more opportunity for nesting and pre-laying behaviour.

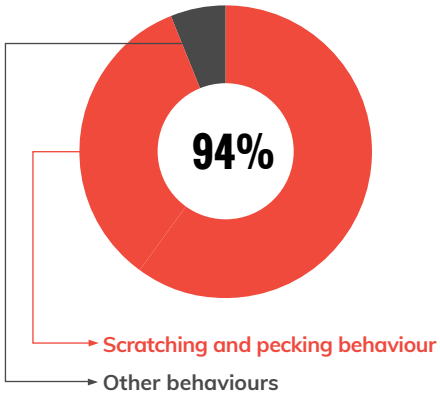


Hens in enriched cages spend their life on wire mesh with little space to flap their wings or perch up high at night to feel safe. Photo: L214

FORAGING & PECKING

UNDER NATURAL CONDITIONS, FORAGING BEHAVIOUR TAKES UP A SUBSTANTIAL PROPORTION OF THE DAILY TIME BUDGET for the red jungle fowl (the ancestor of the current domesticated breed of hens), where 60% of the time is spent pecking and 34% is spent scratching the ground [36]. Even the provision of ad libitum feed does not eliminate the need to explore and forage as the act itself appears to be rewarding [37]. Foraging is considered to be a high priority for egg-laying hens, where domestication has reduced, but far from eliminated, the motivation to forage. When hens are prevented from foraging in cages or general sub-optimal housing conditions, their frustrations can result in injurious feather-pecking, a result of re-directed foraging behaviour [31].

Foraging behaviour takes up a substantial proportion of the daily time budget... 60% of the time is spent pecking and 34% is spent scratching the ground.



DUST-BATHING

DUST-BATHING IS A NATURALLY REWARDING BEHAVIOUR with long-term health benefits such as maintaining healthy plumage and reducing lice and mites [38,39]. Dust-bathing is comprised of a characteristic sequence of movements and when hens perform the entire sequence it is generally viewed as an indication of good welfare. Although enriched cages are fitted with an area intended for dust-bathing (a small scratching mat), incomplete sequences or sham dust-bathing (where birds go through the motion of dust-bathing but with a lack of substrate to perform the behaviour properly) is often observed [40]. This indicates that the need for dust-bathing has not been satisfied due to the limited space [41,42].

ROOSTING & PERCHING

IN THE WILD, THE RED JUNGLE FOWL ROOSTS IN TREES during the night-time, presumably seeking refuge from ground-dwelling predators. Egg-laying hens are also highly motivated to perch or roost on elevated structures, in particular during the night [43] but also for up to 41% of the daytime [31]. The use of elevated perches has many positive effects: it reduces fear, enhances motor activity [44] and improves bone health. Chicks reared with perches will spend more time on them and are less prone to cannibalistic behaviour as adults [45]. In enriched cages, perching is provided but there is insufficient space for all the hens to roost at the same time, and they are only slightly elevated above the cage floor. Therefore it is uncertain whether they provide a sense of security during sleep.

FIG. 2—THE MINIMUM SPACE REQUIRED FOR LAYING HENS[21]

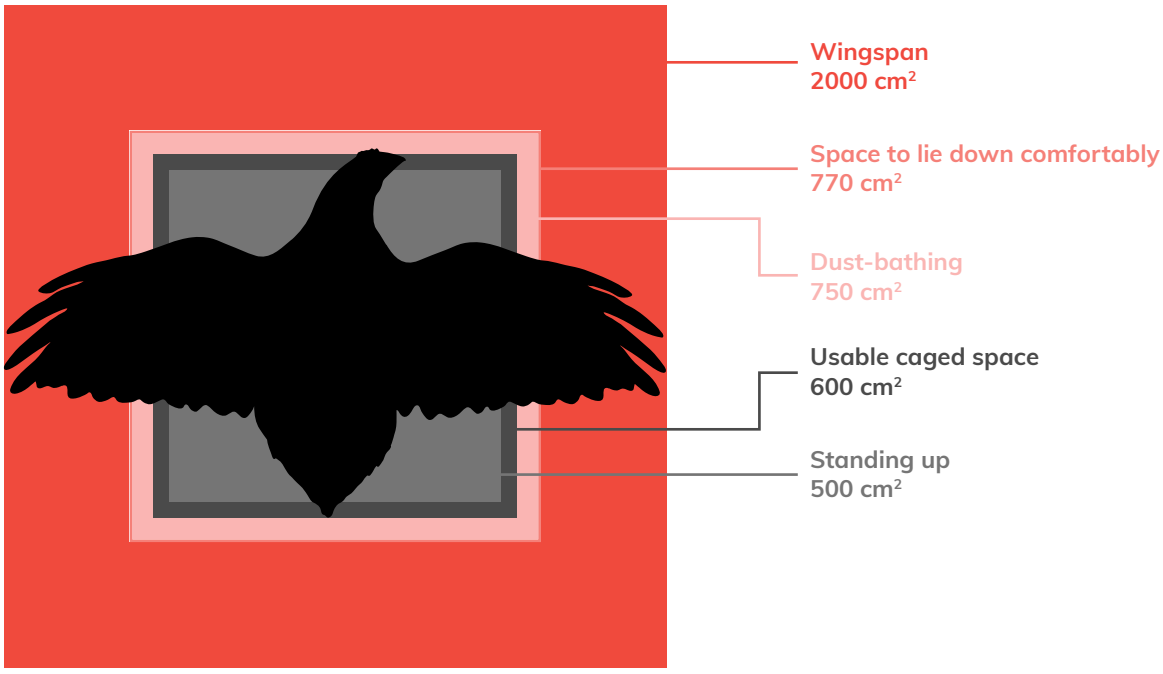


TABLE 2 The Potential for Performance of Essential Behaviours in Different Housing Systems

BEHAVIOUR

HOUSING SYSTEM	MOVEMENT	PERCHING	NESTING	FORAGING	DUST-BATHING
CONVENTIONAL CAGES	Very limited/ Non-existent	Non-existent	Non-existent	Non-existent	Non-existent
ENRICHED CAGES	Very limited	Limited	Limited	Very limited	Very limited**
BARN	Limited	Good	Good	Limited*	Limited
FREE-RANGE & ORGANIC	Good	Good	Good	Good	Good

** By feeding roughage in barn systems, foraging can be encouraged.*

*** Although 'enriched' cages were designed to allow for dust-bathing, several studies have indicated the behaviour sequences are not fully performed and that sham dust-bathing is being performed instead.*

WELFARE OUTCOMES

ANIMAL WELFARE OUTCOMES are used to assess an animal's well being at a farm level. They are commonly used on farm to record and evaluate the level of welfare of the different farms in their supply chains. They can also be used in research to compare different hypotheses.

An animal's level of welfare can be assessed based on three different factors: physical health; mental wellbeing; and their capability to perform natural behaviours[46]. As described, hens cannot perform many of their behavioural needs in cages such as running and wing-flapping. Hens' abilities to dust-bathe and forage are also more compromised in all types of cages compared to cage-free systems[44].

More complex environments, such as in aviaries and free-range systems, allow hens to make choices and have better control over what behaviour they wish to exhibit, something that is positive for their overall welfare. Hens that have an opportunity to go outside show a lower level of stress hormones than those in aviaries (barn) and caged systems[44].

Hens in aviaries and free-range systems have stronger bones, but their risk of physical injury can be greater than in cages because of the more complex, free environment. This risk can be reduced by improvements to the shed through better lighting and nutrition[47] as well as improvements in pullet rearing[48]. Some diseases and incidences of high mortality can also be reduced by access to larger areas with more space per bird[49] and better breeding[50].

Hens that have an opportunity to go outside show a lower level of stress hormones than those in aviaries and caged systems.

A cage will always restrict the behaviour of hens and impact on their mental wellbeing and ability to perform natural behaviours. It is considerably easier to enrich conditions in non-cage systems where hens already can perform natural behaviours than trying to give hens opportunity to behave naturally in cages that will always be restricting.

WELFARE OUTCOMES IN CAGE-FREE SYSTEMS

1. Room to perform natural behaviours, such as wing flapping and dust-bathing
2. More choices and control over their environment
3. Reduced stress hormones, especially with outdoor access
4. With the right diet, hens have stronger bones
5. Greater observation by the producer
6. Potential problems are easier to solve than in cages

In cage-free systems such as this free-range farm, hens can make choices about where they perform natural behaviours.

A cage will always restrict the behaviour of hens and impact on their mental wellbeing and ability to perform natural behaviours.

THE IMPORTANCE OF PULLET REARING

LAYING HENS GO THROUGH A REARING PHASE (pullet rearing) before they are moved (around 18 weeks old) to a laying system where they will be until the end of lay. The way pullets are reared in this first production stage has an important impact on their later behaviour and welfare [48]. Pullets should be raised in similar systems to which they will live in the layer house as the birds need the opportunity to learn about the system during rearing, while they are young and more agile [44,51].

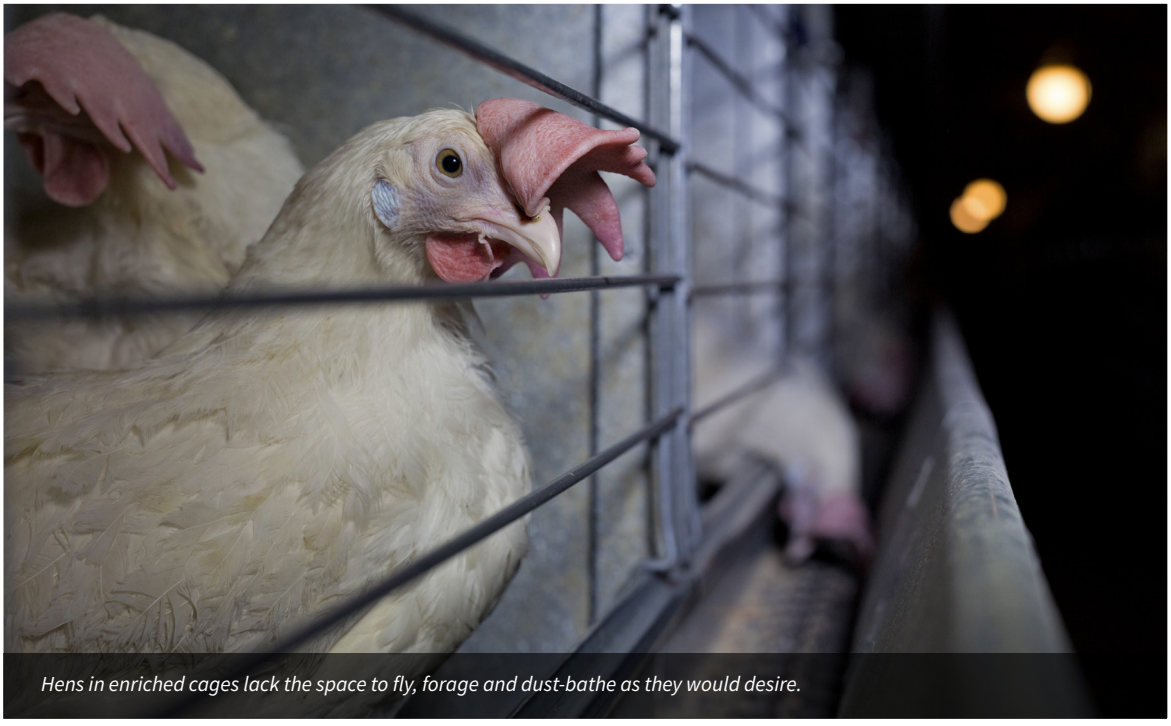
Perches are important for the development of spatial cognitive skills [52] as birds reared without perches are less able to move between different levels in the hen house, resulting in a higher prevalence of floor eggs and cannibalism in adult life [45]. Recent studies have shown that pullets reared in aviaries have better working memory [53] and are less fearful [54] than pullets reared in conventional cages. In addition, the growing phase of pullets prior to sexual maturity represents a critical period for structural bone growth. Chicks begin to use perches in the first weeks of life, and load-bearing exercise achieved through perching improves the overall strength of the bone, reducing the risk of fractures [55].

In their first week of life, pullets learn to forage, pecking at everything in order to find out what is edible [56]. In the absence of appropriate pecking substrates like litter and scattered grains, there is a risk that the explorative pecking will be redirected to their flock mates' plumage [57,58]. Provision of litter during the rearing period has been shown to increase plumage quality and reduce feather-pecking [59,60]. Feather-pecking that started during rearing phase will probably be persistent throughout the laying phase [27].

Additional enrichment methods for rearing pullets can greatly impact their welfare in the laying period, and would be impossible in cages. The use of dark brooders and shelters provided to pullets to simulate natural brooding are shown to reduce severe feather-pecking and improve overall feather condition when the birds are adults [61]. Access to pasture for free-range birds is important from an early age to ensure that birds are confident in leaving the shed on the laying-hen farm as this reduces feather-pecking risks [48].

FINAL REMARKS

The science has demonstrated for a significant period of time that the caging of laying hens is detrimental to their welfare regardless of the improvements brought by EU legislation in 2012. At a time when consumer demand for higher welfare systems has never been greater, and while many major companies are making the shift to remove cages from their supply chains, governments should move to prohibit the cruel and outdated 'enriched' cages in line with other leading countries like Germany and Switzerland.



Hens in enriched cages lack the space to fly, forage and dust-bathe as they would desire.

SUPPORTED BY

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