

Welfare of MEAT CHICKENS

Meat chickens (also known as 'broilers') are the most commonly farmed animal in the UK (with the exception of farmed fish). More than one billion are slaughtered annually in the UK¹. Most broilers are reared in large, closed buildings where temperature, artificial lighting, ventilation, food and water are controlled to ensure the birds grow efficiently. Unfortunately, the majority of broilers are reared to standards that we believe are not good enough in terms of animal welfare. In the UK, it is indeed estimated that only about 3.5% of meat chickens are reared in free-range systems and less than 1% in organic systems. Even fewer are reared in higher welfare indoor systems.

Broilers Natural History and Behaviour

Modern domestic fowl have been bred from wild ancestors over 8000 years ago in South-East Asia. Their exact origins have been debated for centuries. However, molecular genetic studies of modern jungle fowl and domestic breeds have confirmed the hypothesis that red jungle fowl (*Gallus gallus*) are the primary wild ancestor of the domestic chicken. Studies show that the senses and behaviours of chickens are similar to those of the red jungle fowl, although the frequency of behaviours may vary. Domestic fowl have good short and long-distance vision, and can detect a broad range of colours, including ultraviolet (UV) which is thought to be used for rapid movement detection. They also possess a well developed sense of smell and can detect sound frequencies from about 20Hz to 4000Hz. They also have good tactile abilities, in particular in their beak, which contains many nerve endings.



These well developed senses allow domestic fowl to gather detailed information about their environment, which in turn influences their behaviour and understanding of the world. Domestic fowl are social animals and display many complex behaviours. Under natural conditions, they show a range of social structures, although they will usually form flocks of up to 15 individuals. Exploration, activity, aggression, neophobia (fear of new/unfamiliar objects, experiences etc.) and fearfulness are terms which are frequently used to describe their personalities, which vary between individuals. However, modern broilers are more docile and less fearful of humans than their ancestor, the red jungle fowl, but are still motivated to perform a range of foraging and grooming behaviours in modern farming environments, including pecking, scratching in the litter, and dustbathing. Finally, contrary to what is generally believed, research has shown that domestic fowl present a range of very sophisticated cognitive abilities, with very good memory, as well as highly complex communication systems².

The Welfare of Meat Chickens

Commercial broiler production

Around one billion broiler chickens are slaughtered annually in the UK¹. Broiler chickens hatch in a hatchery and are then moved onto a growing farm where they usually stay until slaughter. Typically, around 25,000 birds are housed together within a shed, but some buildings can house up to 50,000 birds.

Facing an increased demand for meat chicken over the years, broilers have been selectively bred to grow very quickly, with a high meat yield and increased efficiency. This can lead to welfare issues, including lameness. The fastest growing breeds can reach market weight (about 2.2 kg) in only 35-36 days.

It is estimated that over 90% of broilers are reared in intensive systems*. Only about 3.5% are reared in free-range - and less than 1% in organic - systems.

While meat chickens reared in intensive systems are raised indoors with no access to the outdoors, free range systems allow access to the outside, whilst higher welfare systems (indoors and outdoors) provide more space per bird and usually use higher welfare, slower growing breeds.

The most common slaughter method for broiler chickens is gas killing, usually using carbon dioxide to ensure the birds are rendered unconscious and insensible to pain before being slaughtered/killed.

*Systems where expression of natural behaviours is so restricted that welfare is compromised.



RSPCA Assured Certified Chicken Farm

Housing Systems

Almost immediately after hatching, day-old chicks are transported from the hatchery to the rearing farm. The chicks then go through a 'brooding phase', which usually consists of confining the chicks in an area of the shed where they are provided with supplementary heating. The air temperature is then gradually reduced as they are better able to regulate their own body temperature.

Indoor Systems

Most meat chickens are reared in large, closed, buildings, where temperature, artificial lighting, ventilation, food and water are precisely controlled and managed to increase productivity. For example, low light levels are kept to encourage the birds to eat more and to discourage activity, which maximises their growth rate. In intensive systems, broilers have been bred to grow very quickly. Typically, broilers grow on average 62g per day, and are slaughtered at about five weeks of age at a weight of 2.2kg. Food and water are provided in lines along the length of the building, and diets are carefully formulated to meet the chickens' nutritional needs at every stage of their lives. The large flocks of 25 – 50,000 birds are reared on a litter floor, which typically consist of wood shavings. The litter in a broiler shed is generally not renewed whilst they are in the shed, and will only be cleaned once the birds are sent to slaughter. Most birds are reared at a stocking density (number or weight of birds per unit of space) of 38kg/m², which represents approximately 19, two kilogramme birds per square metre of floor space. There are, however, higher welfare indoor systems, where broilers have more space and higher welfare slower growing breeds are used.

Free-Range

In free-range systems, broilers generally have more space than in intensive systems (lower stocking density of maximum 27.5kg/m²), and have daytime access to outdoors which provides them with a more natural environment and greater ability to perform natural behaviours. Broilers are usually slower growing higher welfare breeds, and are therefore slaughtered at a later age (approximately 56 days of age).

The Welfare of Meat Chickens

Organic Systems

Organic rearing systems provide lower stocking densities than free-range systems, with a maximum stocking density of 21kg/m² indoors, and at least 4m² per bird is required outdoors. Organic reared broilers must have daily access to the outdoors for at least one third of their lives, and the range should be mainly covered with vegetation. They are slaughtered at a minimum of 81 days of age. The proportion of organic production systems is, however, very small, and represents less than 1% of broiler rearing systems in the UK.



RSPCA Assured/Alexander Caminada©

Chickens on indoor farm

Key Welfare Issues:

FAST GROWTH RATE

Meat chickens have been genetically selected to grow very fast, producing the maximum amount of meat in the minimum amount of time. The time from when the birds hatch to reaching slaughter weight of about 2.2kg can be as little as five weeks, with an average daily weight gain of over 62g. The consequences of such rapid weight gain can be dramatic, contributing to the development of ascites (heart conditions), foot pad burns and lameness. The RSPCA believes that only higher welfare breeds that are genetically slower growing should be used, as they are less likely to develop these welfare issues³.

SPACE ALLOWANCE

A lack of appropriate space can lead to poor welfare as chickens are not able to move around, perform natural behaviours (e.g. stretching, wing spreading and walking) and exercise properly⁴. A stocking density of 38kg/m², as usually observed in intensive farming, means each 2kg bird is allocated as little as 526cm² of space, which is less than an A4 sheet of paper. Decreased activity in broilers who lack enough space makes them more prone to lameness. Furthermore, less space makes it more difficult to maintain good air and litter quality because of the accumulation of faeces. Prolonged contact with litter can lead to painful ammonia burns to the feet, legs (hock burn) and breast, as well as skin infections. Higher stocking densities also increase the chances of birds becoming heat stressed and increase the amount of aerial contaminants which may lead to respiratory health issues.

LACK OF ENRICHMENT

The majority of chickens worldwide are kept in a barren environment and have limited ability to express natural behaviours such as perching, ground pecking and foraging. Such an environment discourages bird activity, and can lead to lameness issues as well as skin problems. A stimulating, enriched environment (for example, one containing straw bales, perches and objects to peck at) encourages birds to be more active, which helps to keep them healthy.

LIGHTING

Meat chickens are provided with low light levels which discourages activity and increases food intake while allowing a reduced use of electricity. Legally, in the UK, light levels must be at least 20 lux over 80% of the usable area. In comparison, a brightly lit room is around 400 lux, and natural daylight is around 30,000 to 100,000 lux. Chickens have well developed colour vision; it is their main sense and is designed for use in brightly lit conditions. Legally, chickens only have to be provided with a minimum of six hours of darkness per 24 hour cycle, only four hours of which must be uninterrupted darkness. Having almost constant light does not allow chickens to have sufficient darkness periods to rest.

The Welfare of Meat Chickens

Work of the RSPCA to improve meat chicken welfare

WELFARE STANDARDS

The RSPCA is working in a number of different ways to improve the welfare of meat chickens. We strongly encourage all chicken producers to adopt the RSPCA Welfare Standards for meat chickens, which we have developed to help ensure that higher standards of animal welfare are met at all stages of the chicken's life. The standards are developed by the RSPCA Farm Animals Department and informed by scientific evidence and practical farming experience. They are regularly reviewed to ensure they remain relevant and up-to-date. The standards address all the key areas affecting chicken welfare. For example, they ensure that there is sufficient space and facilities for chickens to perform natural and active behaviours. In indoor systems, the stocking density must never exceed 30kg/m², and 27.5kg/m² in free-range systems. The standards also require the use of slower growing higher welfare breeds to help prevent welfare issues which can result from fast growth, such as lameness. In addition, the inclusion of environmental enrichment such as straw bales, perches and pecking objects are required and natural light must be provided. The standards do not allow shackling while the birds are conscious prior to killing, and gas killing systems are used for slaughter.



A Welfare Outcome Assessment (WOA) protocol for meat chickens, involving assessment of various important animal-focused welfare measures, was developed by the AssureWel project, and is included in the RSPCA standards. The requirement for a WOA to take place on RSPCA Assured members' farms is in place in order to help monitor and improve chicken welfare on-farm. Scheme level data will be used to inform the development of future RSPCA welfare standards.

CAMPAIGNING WORK

During 2017, the Farm Animals Department secured funding to launch a campaign to both inform consumers about meat chicken production and encourage retailers and food service companies to adopt higher welfare sourcing policies.

The RSPCA and other groups across Europe are urging food businesses to implement a new set of key standards – [‘The European Chicken Commitment’](#) – and to commit to higher welfare chicken across their whole supply chain by 2026. The Commitment calls for the use of higher welfare breeds to protect chicken health and welfare. It also calls on food businesses to source birds that have been provided with more space, enrichment, and natural light as well as the adoption of more humane methods of slaughter. As of today, UK retailers Marks & Spencer and Waitrose, and other food businesses and groups such as KFC, Nando's, Unilever, Sodexo, and Nestlé have signed up to the Commitment.

ADVOCACY WORK

We take every opportunity to work closely with the government and with food retailers to suggest how improvements to meat chicken welfare can be made. Discussions with retailers on their chicken meat sourcing policies have resulted in significant progress in both the UK and overseas, with many now setting improved welfare requirements for the farms that supply them. The RSPCA is joint signatory to the pan European initiative, The European Chicken Commitment (see above). The key requirements for the production of higher welfare chicken set out by the Commitment reflect key issues for which the RSPCA has long advocated and which are included in the Society's own welfare standards for meat chickens.

The Welfare of Meat Chickens

RESEARCH PROJECTS

Following a change to legislation in 2015 (The Welfare of Animals at the Time of Killing (England) Regulations 2015), which allowed the use of carbon dioxide-only gas systems for the slaughter of meat chickens in the UK, this method has become increasingly popular. During 2016, a comprehensive review of the scientific literature relating to the use of carbon dioxide gas for the killing of meat chickens was undertaken by the RSPCA Farm Animals Department, in addition to visits to see – in operation – the various systems available for use across the world. As a result of this review, it was considered that carbon dioxide gas killing could be acceptable from a welfare perspective, providing the systems used are operated and managed appropriately. In 2017, following a consultation with relevant industry stakeholders and experts, the Farm Animals Department revised the RSPCA welfare standards relating to gas killing to permit the use of carbon dioxide gas. The standards require that carbon dioxide does not exceed an average maximum concentration of 30%, and a maximum concentration of 33%, until birds have lost consciousness. Detailed and strict requirements relating to the use of carbon dioxide systems have been included to strengthen the standards in this important area.

The RSPCA recently commissioned an independent trial to assess the production and welfare characteristics of the chicken breed used most extensively worldwide from each of the three globally dominant meat chicken breeding companies, and compared these with a commercially-viable slower growing breed. The results of this trial, which was funded by the Farm Animal Welfare Forum, were published in 2020 in our report, *Eat, Sit, Suffer, Repeat*⁶ as well as a scientific paper. The trial revealed that the genetics of these conventional breeds place them at greater risk of welfare problems. These breeds can suffer poor health and welfare as a result of breeding programmes that prioritise performance over welfare. They were found to have significantly higher levels of mortality (including culls), lameness and hock burn, and suffered significantly higher incidents of wooden breast and white striping. These are diseases of the breast muscle which can cause pain, as some of the muscle fibres die while the chicken continues to grow rapidly. Furthermore, these conventional breeds spent significantly more time sitting and eating, particularly towards the end of their life while birds of the slower growing breed remained active. Following publication of the report, the Farm

Animals Department met with relevant stakeholders including retailers, industry and government to discuss the findings in greater detail, as well as the solutions the report brings to light.

How you can help!



If you eat meat, eggs or dairy products and are concerned about welfare then look out for products carrying the RSPCA Assured logo. RSPCA Assured is the RSPCA's farm assurance and food labelling scheme that aims to ensure animals are reared, handled, transported and slaughtered/killed according to strict RSPCA welfare standards, developed by the RSPCA. The RSPCA welfare standards are informed by scientific evidence and practical experience.

If more consumers insist on higher welfare products, more supermarkets will want to stock them, which will encourage more farmers, hauliers and abattoirs to improve their practices and ultimately more farm animals will benefit.

Take part in the RSPCA's campaigns for farm animals by visiting www.rspca.org.uk/campaigns.

The Welfare of Meat Chickens

Recommended further information

- RSPCA website: <https://www.rspca.org.uk/adviceandwelfare/farm/meatchickens>
- Gas killing systems for farmed chickens and turkeys: <https://www.rspca.org.uk/adviceandwelfare/farm/slaughter/factfile>
- Assurewel Broilers assessment: <http://www.assurewel.org/broilers>
- British Poultry Council: <https://www.britishpoultry.org.uk/>

References

¹ United Kingdom Poultry and Poultry Meat Statistics September 2020. Department for Environment, Food & Rural Affairs 2020.

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/936520/poultry-statsnotice-22oct20.pdf

² Garnham, L. and Lovlie, H. , 2018. Sophisticated Fowl: The Complex Behaviour and Cognitive Skills of Chickens and Red Junglefowl. *Behavioural Sciences* 8(1), 13.

³ Dixon, L., 2020. Slow and steady wins the race: The behaviour and welfare of commercial faster growing broiler breeds compared to a commercial slower growing breed. *PLoS One* 2020; 15(4): e0231006 <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7135253/>

⁴ Hall A.L. (2001) The effect of stocking density on the welfare and behaviour of broiler chickens reared commercially. *Animal Welfare*, 10, 23-40

⁵ RSPCA (2020) Eat. Sit. Suffer. Repeat. <https://www.rspca.org.uk/webContent/staticImages/BroilerCampaign/EatSitSufferRepeat.pdf>

Royal Society for the Prevention of Cruelty to Animals
Wilberforce Way, Southwater, Horsham, West Sussex RH13 9RS
0300 1234 999 www.rspca.org.uk [facebook.com/RSPCA](https://www.facebook.com/RSPCA) twitter.com/RSPCA_official
The RSPCA helps animals in England and Wales. Registered charity no. 219099.
The RSPCA only exists with the support of public donations. © RSPCA 2022.