



Cooked alive:

the agony of heatwaves for
chickens in UK factory farms



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About World Animal Protection

We are World Animal Protection. We're here to end animal cruelty and suffering. Forever. Putting animals first isn't just better for them, it's vital for and for our shared planet. It will take the combined power of people, companies, and governments to tackle the broken systems that cause animal suffering. Together, we can transform the lives of farmed and wild animals around the world.

Cooked Alive: the agony of heatwaves for chickens in UK factory farms

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Cover: Broiler chickens tightly crammed together inside a windowless UK factory farm with little room to move. Their mouths open panting, trying to cool themselves down. Credit: World Animal Protection / Tracks Investigations

Introduction

Sentient animals are being suffocated in UK factory farms. In 2024, 1.5 million broiler chickens are at imminent risk of dying prematurely every time the UK is in a heatwave.

The UK Met Office defines a heatwave as a period of at least three consecutive days with daily maximum temperatures meeting or exceeding the threshold specific to a location. This threshold varies across the UK, reflecting regional climate differences. The lowest, covering places like Wales and Scotland, is 25°C, and the

highest, covering London and parts of the East Midlands, is 28°C. (Met Office, n.d.)

Heatwaves can be detrimental to a chicken's well-being. They cannot sweat and so cool themselves down by panting. But in baking hot, overcrowded, and often windowless sheds typical of factory farms, chickens pant so much that the exertion makes them even hotter. This leads to a greater production of heat compared to heat loss. (Department for Environmental Food and Rural Affairs, 2005) which can lead to discomfort and even premature death.

Chickens raised for meat production are known as broilers.



Photo: World Animal Protection / Tracks Investigations

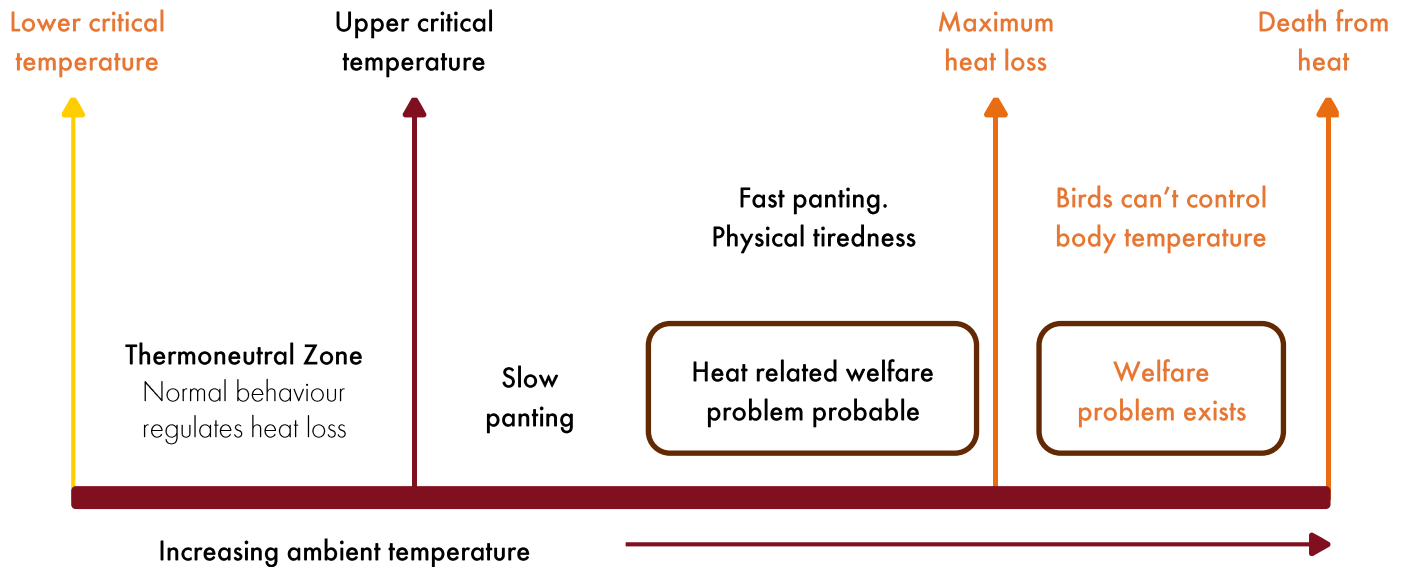


Heat stress

Chickens become 'heat stressed' when they cannot maintain a balance between body heat production and body heat loss. They spend less time feeding, moving around, and more time panting, drinking, elevating their wings, and resting.

Factory farmed chickens in the UK are crammed so tightly together in huge, crowded sheds or cramped cages that they don't even

have the space to elevate their wings. The thermoneutral zone for chickens, which lies between 18 and 22°C, is the temperature range where birds can maintain their body temperature without expending extra energy, such as panting.



Source: (Department for Environmental Food and Rural Affairs, 2005)

This graphic shows the different ambient temperature zones for poultry, which refers to how hot or cold a bird's immediate environment is. The higher the ambient temperature, the more likely poultry will become heat stressed and die.

If temperatures inside poultry sheds reach above the 'upper critical temperature', this can cause heat stress. This can be categorized into three levels based on the severity of the stress experienced:



Mild stress: Occurs at temperatures around 25°C. This level of stress is typically the least severe however chickens can still encounter problems with their temperature regulation.



Moderate stress: Occurs at temperatures around 30°C. At this level, signs of fatigue and lethargy become noticeable, indicating a significant impact on the bird's well-being.



Severe stress: Occurs at temperatures upwards of 35°C. This level of stress is the most severe and can lead to serious health issues and death. (Juiputta, 2023)



Photo: World Animal Protection / Tracks Investigations

Heat-stress in broiler chickens



The UK has over 1,550 intensive poultry units and more than 126 million broiler chickens at any given time, of which 95% are fast-growing breeds. (World Animal Protection, 2024)

Heat stress is higher in broiler chickens. Due to their high body mass, a result of selective breeding, they need to expend more energy to keep their bodies functioning, which in turn produces more body heat. UK factory farms confine around 19 birds per square metre, giving each bird space no bigger than an A4 piece of paper. (Social Market Foundation, 2023) Being packed so closely together reduces their ability to lose heat by up to 40%. (Department for Environmental Food and Rural Affairs, 2005)

Movement can be very difficult for broiler chickens because of their weight and being squashed in a confined space. This can lead to starvation or dehydration. Heat stress and dehydration significantly impact the electrolyte balance in chickens, affecting their normal bodily functions. Therefore, having access to cool water is essential in preventing issues like dehydration. However, overcrowding in factory farms make it very challenging for chickens to access essential resources like water.



Photo: World Animal Protection / Tracks Investigations

Heat-stress in egg-laying hens



In 2023, the number of egg-laying hens in the UK surpassed 40 million, with over 11 million still confined to cages. (World Animal Protection, 2024)

Normally when temperatures are high, egg-laying hens will seek out cooler areas within their environment. UK factory farms do not give hens this opportunity. They are often kept in 'enriched' cages stacked on top of one another in massive, enclosed buildings. These cages have nest boxes, litter, and some perch space, but hens are still severely restricted in their ability to cool themselves down. They often cannot stretch their wings fully, flap

their wings properly, or engage in other natural behaviours such as dust bathing and foraging which help regulate their body temperature. (RSPCA, n.d.)

Heat stressed hens will lessen the amount of food they consume as a way to cool themselves down, but this can impact the number and quality of eggs a hen will lay. (Kim, 2024)

Scottish consultation on cages

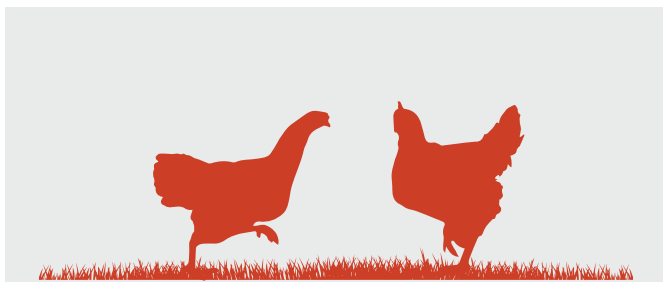
The Scottish Government has launched a consultation on the policy proposal that would put in place a 2030 ban on the instalment of new cages leading to a 2034 ban on enriched cage production. This would be a first in the UK and we hope to see this carried out across England, Wales, and Northern Ireland.

We are falling behind many of our European neighbours. In Germany, enriched cages will be banned in 2025, in Czechia by 2027 and in Slovakia by 2030. France has banned the installation of any new cages. If we do not follow suit, millions of egg-laying hens in the UK will continue to suffer.

Ammonia

The tight confinement of chickens in UK factory farms can produce a build-up of faeces in their litter, of which chickens are forced to sit and stand in. When the faeces decompose, ammonia is produced which is a harmful gas that can be toxic to chickens. The concentration of ammonia in poultry sheds is exacerbated by heatwaves, making the conditions for chickens even worse. (Howell, 2019)

As a result, chickens develop hock burns. Hock burns are a type of contact dermatitis, meaning they are ulcers that take time to grow and are specifically sited on the back of the knee.



A hock burn is an injury to the chicken's leg caused by high exposures to ammonia from excrement. This exposure is known to increase during high temperatures.

Open Cages did a study of 514 British chickens sold in 22 different branches of Lidl (a British supermarket) and found 74% of them had visible brown ulcers at the point of sale. (Open Cages, 2023) These results match a study from Cambridge University Veterinary Medicine department in 2010, which found hock burn prevalence of 82%. (Broom, 2005) Therefore, if the Open Cages study is representational of hock burn prevalence in the national flock, we can expect around a billion UK chickens to suffer from hock burns in any given year. During heatwaves, this number will likely be even higher.

High concentration levels of ammonia can also lead to chickens developing footpad issues, and corneal ulcers which can ultimately lead to blindness. (Li, 2020)

The inhalation of ammonia by chickens can cause serious respiratory problems like bronchitis and pneumonia, causing breathing difficulties and irritation in the windpipe. (Howell, 2019) Normally a chicken relies on its sense of smell to find food and interact with the environment, however factory farms compromise this ability when ammonia levels are high. (Angell)

Ventilation systems in UK factory farms

The UK has specific regulations in place that require animals to be protected from extreme weather, including overheating. (Open Government, 2007) This includes adequate ventilation and cooling systems in housing facilities. But, in July 2022 around 4 million sentient chickens slowly suffocated to death in factory farm sheds during the record-breaking heatwave which saw temperatures reach 45 degrees Celsius. James Mottershead, poultry board chair at the National Farmers Union (NFU), stated that some of the systems used to regulate the temperature inside these sheds were "overwhelmed" by the extreme heat. (The Independent, 2022)

Cramming 40,000 plus chickens into a single shed creates a very challenging environment. They are forced to compete for space, food, and water which can lead to increased stress and anxiety. This stress causes them to expend more energy to cope with their surroundings, making them hotter. Not having adequate ventilation and cooling systems, while trapped by the thousands in these sheds, is a death sentence for millions of chickens in the UK.

What needs to change

Heatwaves are extreme weather events and because of climate change, they are becoming longer and more intense.

We need to stop allowing UK factory farms to cook chickens alive in heatwaves. We need to move away from intensive factory farming systems that subject billions of animals to cruel and inhumane conditions each year.

We are calling on the UK government for a ban on new and expanding factory farms in the UK.

Solutions

We are also calling on the UK government to rethink food security and move away from intensive factory farming systems that subject billions of chickens to cruel and inhumane systems. Instead, the government should shift support to regenerative farms.

On truly regenerative farms, the slow-growing chicken breeds are raised on high-quality feed in forested pastures where trees and shrubs offer natural shade, reducing heat stress and providing protection from harsh weather and conditions such as heatwaves. Chickens are also able to dust bathe which is a natural behaviour where chickens roll in the dust to clean their feathers and skin. This behaviour also helps regulate their body temperature by allowing them to cool down.

We are urging the government to ban new and expanding factory farms that place unnecessarily cruel pressure on chickens and instead, focus on shifting support to high welfare farms.

Photo: World Animal Protection / Tracks Investigations



Glossary

Ammonia - a compound composed of nitrogen and hydrogen. It's a colourless gas with a characteristic pungent smell. Ammonia is toxic and can be irritating to the eyes, skin, and respiratory tract. High concentrations can be lethal.

Broilers - chickens specifically bred and raised for meat production. They have been selectively bred to grow quickly and gain weight efficiently relative to the amount of feed they consume.

Enriched cages - These are a type of battery cage but with a bit more space about the size of a postcard for each bird, an area for egg laying and some perch space.

Dermatitis - Dermatitis in chickens is an inflammation of the skin. It's a common issue in both broiler and layer chickens and can significantly impact their health, welfare, and productivity.

Factory farming - Farming practices that do not acknowledge the sentience and welfare of animals, and where negative animal welfare, environmental and labour impacts are significant yet not factored into the costs of production. The business model is characterised by concentrated and highly corporatized management, production efficiency and process control, monocultures, high production volumes, and a strong focus on

cost minimisation. These systems are associated with damaging human and planetary health impacts.

Heatwave - defined by temperatures that are significantly higher than the average for that time of year and location.

Heat stress - Heat stress occurs when the body is unable to cool itself sufficiently, leading to a range of symptoms and potentially serious health conditions. It can affect humans, animals, and even plants, particularly during heatwaves or in environments with high temperatures and humidity.

Hock burn - A type of contact dermatitis, meaning they are ulcers that take time to grow. They are specifically sited on the back of the knee.

Regenerative farming - Describes farming and grazing practices that, among other benefits, reverse climate change by rebuilding soil organic matter and restoring degraded soil biodiversity - resulting in both carbon drawdown and improvement to the water cycle.

Thermoneutral zone - the range of environmental temperatures at which an animal can maintain its body temperature.

Appendix: Number of premature deaths methodology

The literature shows that a single day of high heat can cause 1.2% mortality in broilers of a certain age. (Vale MM et al., 2010) There are 126 million broilers chickens in the UK at any given time. Therefore, for every day the UK is in heatwave, 1.5 million broilers are at risk of dying. If we have heatwave rates of 2022, this will be 18 million birds. The effects are compounded, and the longer the heatwave, the more birds we expect to die from heat exhaustion. The exact numbers will depend on the conditions in the sheds, and how effective producers are at implementing heat mitigation strategies. However, what we know is that at any given time, there are 126 million broiler chickens in the UK, and while mortality is multifactorial, all of them are at risk of dying due to a heatwave if the heatwave is prolonged or acute enough.

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We are World Animal Protection.

We end the needless suffering of animals.

We influence decision makers to put animals on the global agenda.

We help the world see how important animals are to all of us.

We inspire people to change animals' lives for the better.

We move the world to protect animals.


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