

BROILER CHICKEN CASE STUDY

UK 2: RSPCA FREEDOM FOOD FREE-RANGE FARM

An account of a higher welfare system with slower-growing birds, access to range, reduced stocking density and environmental enrichment indoors, including natural light.



RSPCA FREEDOM FOOD FREE-RANGE SYSTEM, HELLINGHAYES FARM, DEVON, UNITED KINGDOM

Gravel near popholes helps keep range by the house dry. (NB: Some popholes temporarily closed to prevent windy conditions from chilling the chickens.)



This Freedom Food system with outdoor access is designed to produce higher welfare chicken at a reasonable price for a quality market. It is certified by RSPCA Freedom Food, an inspection and certification system designed to improve the welfare of farm animals. Freedom Food is owned by the RSPCA, who sets the standards used by the scheme. There are separate standards for indoor, free-range and organic systems. To be sold as free-range, the system has to meet EU marketing standards¹.

European marketing standards require that free-range chickens have access to open-air runs and that they are not slaughtered until they are at least 56 days old.

Welfare advantages of free-range systems include:

- Additional opportunities to display natural behaviours such as exercising, foraging, dust-bathing and sunbathing;
- Reduced stocking densities in indoor accommodation, especially when some of the chickens are ranging outside;
- Reduced growth rates due to minimum slaughter age requirement can result in better welfare provided slower-growing breeds are used;
- A reduced risk of lameness due to slower growth rates and increased exercise.

RSPCA welfare standards² incorporate European rules and add additional welfare requirements of their own including:

- Use of slower growing breeds which are more active, have lower levels of lameness and whose parents are less likely to require feed restriction;
- Additional environmental enrichment in indoor accommodation including minimum levels of natural light, bales of straw, perches and pecking objects;
- The provision of shade and shelter on range;
- Minimum sizes and number of popholes, where chickens can enter or leave the shed.

Range

EU marketing rules require that free-range chickens have access to open-air runs for at least half of their lives. There must be at least one square metre of range per bird and it must be mainly covered by vegetation.

Access to these runs allows birds to perform a range of natural behaviours including scratching for different foods, dust-bathing, sunbathing and exploring their environment. Access to range also encourages exercise and reduces the level of crowding for birds who choose to stay inside.

Ranging is encouraged by the provision of tree cover or herb strips which makes the birds feel more secure, especially if threatened by aerial predators, real or apparent, such as birds of prey and aeroplanes. Chickens are descended from the jungle fowl of Asia, birds which naturally live in woodland with access to cover. Cover also provides shade from the sun and shelter from wind.

We visited Hellinghayes Farm during the early afternoon when it is common for free-range birds to be resting inside. However, we were told that when the popholes are opened in the morning *“they stream out”*. It is normal for free-range chickens to be most active at the beginning and

towards the end of daylight hours. Birds normally head inside when it rains. It was raining when we first arrived, but several birds were heading outside after it cleared (see image below).

Breed

EU marketing rules require that birds sold as free-range cannot be slaughtered before the age of 56 days, which should encourage the use of slower-growing breeds. RSPCA welfare standards only permit slower-growing breeds who don't have the potential to grow faster than 45g per day on average. These rules reduce the risk of lameness and of cardiovascular conditions, such as ascites and Sudden Death Syndrome. This requirement also reduces the level of feed restriction required to keep broiler breeders healthy. The female parents of the birds kept on this farm, the JA57s, require little, if any, feed restriction (see Broiler Case Study UK1).

Active breeds such as these are better able to take advantage of free-range conditions. The exercise obtained is in turn good for leg health and mental wellbeing.



Tree cover encourages ranging.

Stocking density



Free-range systems give birds more space inside as they have lower stocking densities.



Space inside increases further when more birds decide to go outside.

Free-range chickens have more space inside as well as being able to range outside. In addition to the requirement for 1m² per bird in the outdoor run, EU marketing rules also require lower stocking densities indoors. The maximum stocking density indoors is set at a flat rate of 27.5kg/m². In practice, there is additional space per bird indoors whenever some of the birds are ranging outside.

Having extra space means birds are less likely to suffer from high temperatures, humidity and ammonia pollution which can result from overcrowding. It also makes it easier for them to move around without jostling each other. It is also easier for them to reach the popholes when they want to range outside.

Once again, all this better exercise means better leg health, better walking ability and less pain due to lameness.

Environmental enrichment indoors



RSPCA Freedom Food-approved free-range systems have more space inside, have natural light and other indoor enrichments.



Perching is a natural behaviour.



Straw bales provide opportunities for scratching and searching for food.



Pecking objects provide additional stimulation.

The key environmental enrichment is access to outdoor range with tree cover, but RSPCA welfare standards also require that the indoor environment is enriched.

Inside, the birds have access to natural light, straw or miscanthus bales, perches and pecking objects. All of these encourage exercise. The combination of higher light levels indoors with shade outside may also encourage outdoor ranging (sudden changes in light can discourage it).

Providing natural light inside provides a better environment for people as well as for the chickens. Light promotes activity, though too much uneven light can cause problems – sunspots can lead to overcrowding.

The farmer felt that this was a “good system that works well, windows added give nicer

environment for both chickens and [people]”. Bright sunlight could be a problem, but adding blinds helped diffuse the light: “The chickens like to sit in the sun”.

No thinning

Thinning is a process by which part of a flock is caught at a lower weight (e.g. 1.7kg) while the rest are allowed to grow to around 2.2kg.

RSPCA welfare standards do not permit thinning of free-range flocks. Avoiding thinning removes one source of stress for the birds. It also reduces the number of birds placed in the shed at the start, reducing the stocking densities throughout the growing period. Avoiding thinning also reduces the risk of *Campylobacter* in the remaining flock.

Welfare outcomes

One of the main reasons why consumers choose a free-range bird is out of concern for animal welfare. Free-range systems have a higher potential for welfare than indoor systems, but whether this is achieved in practice depends on good management. To be sure that welfare is good, it needs to be measured.

The RSPCA welfare standards require farmers to monitor a range of welfare outcome measures and set targets for them³. These include lameness, back scratches and lesions such as hock burns, footpad burns (FPD) and breast blisters, all of which should be minimised. Hock burns and FPD are recorded at the slaughterhouse.

The farm showed good welfare outcomes. At 55 days old, the chickens were highly active, showed low signs of lameness or gait abnormality and FPD, and we didn't observe any lesions. Mortality levels averaged 3-3.5%. Most of the birds showed good walking ability.

At the time of visiting, the farm was not using antibiotics and the birds appeared to be in good health. This is consistent with other anecdotal evidence that this system requires little antimicrobial use, a powerful positive welfare indicator.

Good welfare outcomes are likely to be a result of a combination of breed, lower stocking density, environmental enrichment and access to an outdoor range, together with good management and ventilation.

Exercise is good for all animals and these birds are active. This is partly because slower growth can facilitate well-balanced development and also because it leaves more energy for exercise. It is partly because they have a lower centre of gravity, due to a smaller proportion of breast meat, which facilitates movement. Lower stocking density, high levels of light and other enrichments including access to range further encourage exercise.

Active birds also spend less time in contact with the litter, reducing the risk of hock and FPD. Perching also reduces contact. Anecdotal evidence from a previous visit to a different farm also suggested that litter management is easier with these breeds. This may be due to slower, more efficient digestion or lower stocking density inside. Skin health itself may vary between breeds. Together these may explain the relatively low levels of hock and FPD in this system.

In future, a wider range of welfare indicators will be measured as part of the *AssureWel* project⁴, a collaborative project between the RSPCA, the Soil Association and the University of Bristol.

Nutritional benefits of free-range production

Research suggests that meat from slower-growing breeds of chicken and from birds with access to pasture generally contain lower levels of fat. In addition the fat composition itself can be healthier with higher levels of long-chain omega-3 fatty-acids⁵.

SUMMARY

This system has benefits for chickens, consumers and producers:

- 1. For consumers, it provides a higher welfare bird kept in an outdoor environment at a reasonable cost.**
- 2. For the chickens it means a slightly longer life in a higher welfare system with a healthier breed, access to the outdoors and more space and enrichment indoors.**
- 3. The added value in the product helps to support the rural economy. Stockpeople benefit since less intensive systems can be easier to manage and higher welfare systems can be a more rewarding experience to run. According to the farmer, "this is a good system which works well".**
- 4. Keeping slower growing birds with access to the outdoors can produce a bird with less but better fat, likely to be healthier to eat. Low levels of antibiotic use have wider benefits in helping to reduce the development of antibiotic resistance.**
- 5. RSPCA welfare standards include stipulations about catching and maximum transport time.**

TABLES

BROILER – DESCRIPTION OF SYSTEM	
Date/Time of visit	29 th November 2011 2pm
Farm	Hellinghayes Farm
Farm type	Free range
Certification scheme	RSPCA Freedom Food 
Total flock size (number on farm)	23,000
Number placed (house size)	5,720
Breed	JA757
Age of flock on visit	55 days
Feed	Pan feeders with mash Nipple drinkers
FCR (average for this group of RSPCA Freedom Food free-range systems in this area)	2.283
Maximum stocking density	27.5kg/m ² (~12.5 birds/m ²)
Age and weight at thinning (average GR)	No thinning permitted
Age and weight at slaughter (average GR)	56 days at up to 2.14kg (38.2g/d)
Mortality and cull rates	2.36% (to date lost 102 from flock) (1 st week mostly) (predator 0.5%) Average 3-3.5% mortality
Hock burn rates	None observed
Footpad dermatitis rates	Mild observed
Other health/ welfare problems E.g. Leg problems, Ascites	None observed Flock clean despite poor weather
Natural behaviours observed	Perching on bales and perches Pecking at straw bales Walking / running / preening / agonistic interaction In / out of popholes when rain eased Drinking from puddles

Level of activity	Good Some ranging but poor weather conditions
Antibiotic use	None used at present
Lighting	Natural plus artificial Double-glazed windows along length of house
Ventilation	Natural, automatic ventilation control (side vents along length of house above windows)
Litter	Wood shavings in good condition
Indoor environmental enrichment	Bales and perches
Outdoor enrichment	Trees (apple trees), nettle patch, banks
Levels of ranging and distribution of ranging	Poor but bad weather. Farmer assured us on good day they range well, on the banks and under the apple trees.
Number of stockpersons	1 full time
Frequency of checking birds and any rules about thoroughness	Standards require a minimum of three checks per day. At least one of these checks must be sufficiently thorough to identify any bird showing signs of poor health or injury. Lower stocking densities facilitate this.
Transport to slaughter (distance)	About 15 miles
Market	Whole bird and also portions
Cost/price (per bird and per kilo)	Sainsbury's charge £4 per kilo for free-range RSPCA Freedom Food chicken - Godalming 23.02.12 (35% more than <i>Standard</i> and 67% more than <i>Basics</i>). Checking a year later (06.03.2013), the cost was £3.58 per kilo for Freedom Food free-range. This was 43% higher than <i>Basics</i> at £2.50 per kilo and 7.5% higher than <i>Standard</i> at £3.33 per kilo.
Slaughter	Electrical stunning. Planning to move to biphasic gas stunning.

REFERENCES

- 1 COMMISSION REGULATION (EEC) No 1538/91 of 5 June 1991 introducing detailed rules for implementing Regulation (EEC) No 1906/90 on certain marketing standards for poultrymeat accessed 13/7/12 at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1991R1538:20060323:EN:PDF>.
- 2 RSPCA, 2011 entry from RSPCA indoor booklet.
- 3 RSPCA, 2011, Op Cit.
- 4 <http://www.assurewel.org/>
- 5 Compassion in World Farming, 2012. Nutritional Benefits of Higher Welfare Products. <http://www.ciwf.org.uk/nutrition>



Tree cover provides shelter and security.

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Compassion in World Farming

River Court, Mill Lane, Godalming, Surrey, GU7 1EZ, UK.

Email: education@ciwf.org

Tel: +44 (0) 1483 521 950

Web: ciwf.org/gap

Registered Charity No 1095050.

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Hellinghayes Farm

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